AD NUMBER

ADB000452

LIMITATION CHANGES

TO:

Approved for public release; distribution is unlimited.

FROM:

Distribution authorized to U.S. Gov't. agencies only; Proprietary Information; 20 NOV 1974. Other requests shall be referred to Army War College, Strategic Studies Institute, Carlisle Barracks, PA.

AUTHORITY

usawc ltr, 12 may 1975

US ARMY WAR COLLEGE

CARLISLE BARRACKS, PA. 17013

20 NOVEMBER 1974

AD

ACN 74019

PYRAMIDS, BALLOONS, AND SQUISHY SPHERES: THE DYNAMIC CONTEXT OF MILITARY GRADE CREEP

VOLUME II

STRATEGIC STUDIES INSTITUTE

MILITARY ISSUES RESEARCH MEMORANDUM (MIRM 74-6)

STRATEGIC STUDIES INSTITUTE

US ARMY WAR COLLEGE

Carlisle Barracks, Pennsylvania

PYRAMIDS, BALLOONS, AND SQUISHY SPHERES: THE DYNAMIC CONTEXT OF MILITARY GRADE CREEP

by

Anthony L. Wermuth, Ph.D.

20 November 1974

DISCLAIMER

The findings in this memorandum are not to be construed as an official Department of the Army position unless so designated by other authorized documents.

FOREWORD

The Military Issues Research Memorandum program of the Strategic Studies Institute, US Army War College, provides a means of dissemination of papers intended to stimulate thinking while not being constrained by format. These memoranda are prepared by individuals in areas related to their professional work or interests, or as adjuncts to studies and analyses assigned to the Institute.

This research memorandum was prepared by the Institute as a contribution to the field of national security research and study. As such it does not reflect the official views of the Department of the Army or Department of Defense. This memorandum is Volume II of a two-volume set. It is the complete study produced on the subject; Volume I is an abridgement in the form of an executive summary.

The author of this memorandum is Dr. Anthony L. Wermuth, a member of the Strategic Studies Institute, US Army War College. Dr. Wermuth is a 1940 graduate of West Point and a 1959 graduate of the Army War College, with MA degrees from Columbia and George Washington Universities, and a Ph.D. degree in political science from Boston University. In addition to command and staff assignments during 32 years in the Army, Dr. Wermuth served on the faculties of USMA and the Army War College; he retired as a colonel in 1966, and subsequently served in industry for 7 years in social science research. He is the author of many publications and a member of numerous professional associations. He is listed in Men of Achievement, American Men of Science, and Who's Who in the South.

DeWITT C. SMITH, JR.
Major General, USA
Commandant

Despite popular sterotypes, in many areas the military establishment is the prototype of rationalized and advanced bureacratic structures. By the single measure of educational attainment of members, it is in advance of many other sectors of institutional life. In terms of rank stratification it has moved farther toward a 'middle class' or middle majority hierarchy and decline of an unskilled lower class that have most industrial sectors.[1]

Every indication we have of the shape of the future shows rising requirements of employability. . . [2]

Underneath all, individuals,
I swear nothing is good to me now that ignores individuals,
The American compact is altogether with individuals,
The only government is that which makes minute of individuals,
The whole theory of the universe is directed unerringly to
one single individual--namely to You.[3]

---

[1]Morris Janowitz, "Organizing Multiple Goals," in Morris Janowitz, ed., The New Military: Changing Patterns of Organization, New York: Russell Sage Foundation, 1964, p. 18.

[2]"Automation and Unemployment," Washington: Chamber of Commerce of the United States, November 1968, p. 20 (italics in original).

[3]Walt Whitman, "By Blue Ontario's Shore."

TABLE OF CONTENTS

INTRODUCTION

Grade creep in the armed forces has become a matter of concern to the Congress; hence it becomes a subject of concern to the Pentagon.

What is grade creep? Somewhat amorphous in outline and cryptic in destination, grade creep is a feature of modern organizations involving relative status and social stratification. In stark terms, grade creep refers to the tendency of the average grade of positions within modern organizations to escalate over time. Within the military establishment, incremental advance of the average grade is said to occur within the officer grade structure, within the enlisted grade structure, within the overall combined grade structure of each armed force, and within the overall grade structure of the total military establishment. It is alleged to be most readily manifest in increasing ratios of higher-grade NCO's to lower-grade enlisted men, of officer strength to enlisted strength, of higher-grade officer strength to lower-grade officer strength, and especially of general and flag officer strength to total strength. Several more complex aspects can be discerned, but these appear to be the principal foci of attention.

Five basic questions obtrude promptly. First, are the allegations true; are these averages really escalating in the armed forces?

Second, is an escalating trend good or bad? This paper, incidentally, offers no judgment on this question.

Third, is this escalating trend, if it exists, peculiar to the armed forces?

Fourth, if the trend exists, and if change in the trend is considered desirable, can the trend be arrested or reversed?

Fifth, if it is occurring, why is it occurring? What are the causes?

NOTE: We all build on the past work of others, as well as of our own. As the following pages reflect, I have drawn on an extensive range of expert sources for this study. It may be appropriate to acknowledge also that this study benefits from work done in my previous position as Director, Social Science Studies, Center for Advanced Studies and Analyses, Westinghouse Electric Coporation, particularly from a 2-year study conducted for the ffice of Naval Research, "Potential Impacts of Cultural Change on :he Navy in the 1970's."(7 vols, AD 749 913, 1972.)

One thrust behind critical interest in grade creep leads to such specific questions as "Why do we have more generals per same size force that we used to have?" But more obtrusive concern emerges in two recurrent representative questions: "Why don't we get more combat forces out of our total strength in each armed service?" (frequently referred to as the "tooth-to-tail ratio"), and "Why do we (if we do) have more generals and admirals per same forces than other countries, especially the Soviets?"

Most of us are increasingly aware of burgeoning size, complexity, budgets, and personnel costs of major institutions, as well as of changing organizational aspects which touch our personal lives directly; but most of us are only selectively aware of the organizational phenomenon taking the form of grade creep. Yet, evidence accumulates around us of the escalation of the numbers and status of persons involved in many major social institutions, particularly in those functions at the leading edge of technology.

For instance, in the sense that the "tooth" of any organization comprises the members directly performing the definitive functions of the organization, we may be disturbed to note the shrinking "tooth" of the armed forces, the combat elements, compared to the dimensions of the "tail," the support elements required to sustain the "tooth" effectively in modern, complex, increasingly technological warfare. But the same trend, usually oversimplified in prevailing descriptions, may be seen occurring in other social functions. For example, most of us are aware that the percentage of the population engaged in agriculture has drastically declined; yet, as discussed later, Wattenberg and Scammon suggest qualification of this familiar and somewhat misleading observation that a farm population of five percent of the labor force is "all it takes to feed the United States and a substantial number of foreigners besides." As these two authors show, actually some 37 percent of the American work force is still involved in the production, processing, and distribution of food.

Perhaps the most dramatically disproportionate "tooth-to-tail ratio" occurs in the National Aeronautics and Space Administration, which, in 1972, had 30,000 employees and an annual budget of $3 billion. Like the armed forces and other major American institutions, NASA performs a number of functions for the nation, some of which are little known; yet NASA's primary mission is to exercise America's interest in space technology. In a sense, the projection of space explorers is the "tooth" of NASA; in this sense, when three astronauts are participating in a space mission. NASA's "tooth-to-tail ratio" may be said to be about 3 to 30,000, and during periods when no astronauts are in space, the "tooth-to-tail ratio" might be said (unfairly, I think) to be 0 to 30,000.

In any event, one wonders about occurrence of the same phenomenon, the aggrandizement of support and the escalation of average grade, in almost every other social organization--the government, religious denominations, hospitals, industry, court systems, sports, universities, law offices, the foreign service, and the merchant marine. For example, organized baseball and football obviously employ larger, specialized coaching staffs than they did not many years age, and more officials and statisticians. Does the archbishop of the New York diocese require more higher-graded assistants in his administrative hierarchy that were required, say, 20 years ago? Do the mayors of New York and London? Do the presidents of multiuniversities and multinational corporations?

This paper touches only peripherally on such questions as "tooth-to-tail ratios," and does not attempt to comment directly on them, leaving detailed analysis and justification of military grade structure, status, compensation, and requirements to current specialists on military manpower and administration. Instead, this paper gives greater consideration to a number of broader questions, of which the following are representative: Is grade creep simply a manifestation of hubris and self-aggrandizement on the part of supervisors and executives, especially generals and admirals? Is grade creep an independent or a dependent variable, a cause, an effect, or a symbol? Do political, economic, psychological, and social pressures in the general society affect structure and status in military institutions? Are widespread developments in education, automation, and work patterns pertinent to grade creep? Does grade creep affect a single social layer, or is it pervasive? Is it cyclical or permanent? Are social dynamics discernible which contain implications for all organizational structures, statuses, and relationships? Is grade creep an important development, or negligible? Is grade creep peculiar to the military establishment?

This paper is by no means a comprehensive exegesis of the phenomenon of grade creep, nor does it pretend to trace the linkages in cause and effect of any one strand, or cluster of strands, of interaction. Instead, it merely presents an eclectic report on a number of static frameworks and dynamic forces operating among them to produce movement. Some forces appear to decelerate grade creep: many others appear to accelerate it. Among relevant factors examined are social and functional hierarchies, including structural dynamics in American government; stratification; shifts in American values; technological advances, population growth and related social pressures; the division of labor; the work force; work patterns; organization dynamics; compensation, incentives, and motivation; and leadership and management.

---

[1]As numerous extant studies and analyses testify, highly competent armed forces specialists are continuously engaged in addressing the evolving complexities of military grade structures.

This paper attempts to eschew polemics and advocacy, and claims neither comprehensiveness, rigor, nor definitiveness. It proposes no hypothesis, and makes no policy suggestions for the Pentagon. Its limited, exploratory, heuristic purpose is not really to explain military grade creep itself, but to survey a broad spectrum of social dynamics that might help in understanding increasing interaction between military stratification and the American social environment. In a number of respects, this paper does little more than scratch the surface and suggest further study along a number of promising lines.

A final word of introduction, to help place the problem of grade creep in perspective. In itself, it is not an earth-shaking, Congress-shaking, or military-shaking phenomenon. Grade creep is assumed to be only an effect, not a cause. The course of grade creep will not explain any course of empire or, indeed, of anti-imperialism, either. Nevertheless, while it generates a certain amount of legitimate concern in its own right, its principal value may be symtomatic. In many respects, including its own characteristics and its complex roots, it typifies the changing forces within the military establishment and changing relationships between the military and the total American environment.

ANTHONY L. WERMUTH
Carlisle Barracks, PA
31 July 1974

CHAPTER I

THE PROBLEM TO BE EXAMINED

A. General.

Many sources shed light on the phenomenon of grade creep from the various points of view of Congress, the Department of Defense, the military departments, and other interested agencies and persons who concern themselves with the current state of the military establishment. Perhaps the clearest definition and discussion is contained in the 1972 Hearings.[1]

---

[1]U.S. Congress, House, Committee on Armed Services, Hearings Before the Subcommittee on the Utilization of Manpower in the Military, October 1971 through March 1972, 92d Congress, 1st and 2d Sessions. Washington: US Government Printing Office, 1972, pp. 12225-12227 (referred to hereafter as "1972 Hearings"). The following additional Congressional documents may also be cited, all printed by USGPO, Washington: U.S. Congress, House, Report by the Special Subcommittee on the Utilization of Manpower in the Military, Committee on Armed Services, 92d Congress, 2d Session, 28 June 1972; House, "Utilization of Military Manpower," Hearings Before the Special Subcommittee on Utilization of Military Manpower, Committee on Armed Services, 86th Congress, 2d Session, May 1959 February 1960; Senate, "Utilization of Manpower in the Federal Government," Committee on Post Office and Civil Service, 82d Congress, 2d Session, 1952; House, Subcommittee No. 4 Hearings, "To Amend Section 301 of Title 37, United States Code Relating to Incentive Pay, to Attract and Retain Volunteers for Aviation Crew-Member Duties, and for Other Purposes." Committee on Armed Services, 93d Congress, 1st Session, July-December 1973 (Hearings dated 1974). Official military documents include Department of the Army, Office Chief of Finance, "Criticism of the Current Military Pay System," December 1952 (revised March 1953): Department of Defense, "Study of Military Compensation," Inter-Service Study Group, October 1964; Department of Defense, "Study of Military Compensation: A Summarization," October 1964; Department of Defense, "Report of the DOD ad hoc Committee to Study and Revise the Officer Personnel Act of 1947," December 1960; Department of Defense, "Comparison of Compensation for the Uniformed Services and Civilian Employees (Federal and Private Industry)," September 14, 1962; Department of Defense, "Report on Officer Grade Limitations," May 1973; Department of Defense, "Manpower Requirements Report for FY 1975," March 1974. The perceptions of various commentators can be found in a variety of sources, of which the following are representative: Bob Horowitz, "Hill Asks Review of Senior Rank--Too Many Eagles, Stars?" 24 November 1971 and "Rank Overhaul Urged--House Report Critical 'Too Many Chiefs' Trend," 2 August 1972, both in Air Force Times; Bruce Callander, "'Grade Creep' Solution a Long Range One," Air Force Times, 22 November 1972; Jerry Childers, MAJ, "Grade Structure Can Be Made Appealing," Army, November 1971; "Grade Creep--Is it as Bad as Some Say?" Air Force Magazine, July 1973; "Is There Grade Inflation?" Supplement to the Air Force Policy Letter for Commanders, October 1973.

In his opening statement, Mr. Otis G. Pike, the Chairman of the Subcommittee conducting the hearings, set forth admirably the facets of the problem of direct and immediate concern, rendering quotation at some length desirable:

> In an effort to present some perspective about what our Defense Establishment consists of today, I have made some comparisons between what it consists of today and what it consisted of a generation ago. I have chosen the date of June 30, 1946, for a comparison with June 30, 1971, not merely because it represents a 25-year period but also because there are other similarities which make such a comparison valid. We were then, as we are now, reducing our Military Establishment after a wartime buildup. The total size of the Military Establishment on June 30, 1971--3,030,088 men in 1946 and 2,714,727 in 1971.
>
> The shape of the Army at that time, however, was far different than it is today. Here I use the word "shape" solely in the sense of configuration and not in the sense of equipment, morale, or any other factor.
>
> Our military officer personnel profile 25 years ago was roughly in the form of a pyramid with large numbers of Indians and smaller number of chiefs . . .
>
> Today, believe it or not, our Defense Establishment has more officers in the rank of lieutenant colonel or commander than it has in the rank of second lieutenant or ensign.
>
> We find our officer corps shaped not like a pyramid bur more like a balloon. Throughout our Department of Defense we have vastly increased our middle and upper grade officers and vastly decreased our lower grade officers.
>
> While the ratio of officers to enlisted men remains about the same, the rank of the officers has changed drastically. For a total Defense Establishment of 315,000 men less than we had 25 years ago, we have today 26,000 more captains, 21,000 more majors, 15,000 more lieutenant colonels, and 4,000 more colonels. Each of these ranks include its Navy equivalent from lieutenant through captain. We have made it up by having 43,000 fewer second lieutenants and 77,000 fewer first lieutenants.

Among the enlisted ranks the transition from pyramid to balloon is even more obvious. On June 30, 1946, the Army had more E-1's than E-2's, more E-2's than E-3's, more E-3's than E-4's, and it had only one E-5 for every six and a half E-1's. The Air Force had one E-5 for every seven E-1's. The Marine Corps had one E-5 for every eight E-1's.

Today throughout the Department of Defense there are less E-1's than E-2's, less E-2's than E-3's, less E-3's than E-4's, and the balloon effect starts to taper off only at the E-5 level. The Army which 25 years ago had seven recruits for each sergeant, today has more sergeants than recruits. The Navy which was on approximately a 1-to-1 basis 25 years ago, today has eight E-5's for every E-1. The Marine Corps which 25 years ago was on an 8-to-1 basis, is today on a 1-to-1 basis.

Twenty-five years ago more than half of our officers were below the grade of captain. Today two-thirds of our officers are captains or better. Today we have more E-5's among our enlisted ranks than E-1's and E-2's combined.

The significance of all this is apparent in two areas--one pertaining to budget, the other pertaining to fighting strength.

Addressing the subject of the budget. . . Obviously, it costs more to pay chiefs than to pay Indians.

Even more fundamental than the budgetary consideration, however, is the question of how our men are used in combat. In 1945 the Department of Defense classified 24.1 percent of our enlisted men as ground combat troops. By 1967 that figure had dropped from 24 to 14 percent. In 1967 figures showed that out of 100 enlisted men in all services, fewer than eight were in infantry, three were in the artillery, one and a half were in armor, and 1.7 were combat engineers. For every combat infantryman, there was an electronics maintenance man; for every artilleryman, there were more than three aircraft mechanics and repairmen; for every armored combat man there were three automotive mechanics and repairmen.

This is the logistic "tail" . . .

Finally, of course, there is the question of who gets killed in a war. We have approximatley one officer for every seven enlisted men but, as of December 31, of total combat deaths, 4,502 had been officers, 39,737 had been enlisted men. Of that same total, 44,249 combat deaths, 20, 803 had served in the military for less than 2 years, 14,983 for less than 1 year.

> The Army and the Marines suffered most of the casualties in Vietnam. As of June 30 of this year, 68 percent of the dead of the Army were corporals or below, 87 percent of the Marine dead were corporals or below. An Army sergeant had a more than three times better chance of surviving than a private, first class, a Marine sergeant an eight times better chance.
>
> All of the foregoing are cold statistics. Whether our military has too many chiefs and too few Indians, too much fat and not enough fight, too many colonels and not enough corporals, are judgments we must make for ourselves.
>
> It is our intention during these hearings to provide for the Armed Services Committee, and for the Congress, hard facts on which to make these judgments. It is our hope that if new legislation is required, we will be able to recommend new legislation which will help to some degree. The grade structure which we will discuss today is to some extent the creature of Congress, and to some extent it is not . . .

A number of other passages from the record of the same Hearings further illuminate the principal aspects of grade creep of concern to the Congress (the reader will understand that certain questions by Committee members do not reflect perverse ignorance on the part of the member but thoroughness in having certain data appear explicitly in the record):

* * *

> Mr. Pike: . . . Why does going into combat call for a grade. . . . I can understand why it calls for training, but I don't understand why it calls for a grade.[2]
>
> * * *
>
> Mr. Pike: Colonel, you have frankly touched the thing which seems to me to be so immoral about the whole operation, and that is we have heard all of this talk about the necessity of giving all these promotions in order to get technical skills and in order to get retention, but when you get into a war, the people who are getting killed are those who have not had the benefit of all of these promotions and all of this pay increase. It does seem to me that we have gotten into a very, very sad situation under which well over half, I think it was 60 percent, of the deaths in the Army were under 2 years of service. . .[3]
>
> * * *

---

[2]The 1972 Hearings, p. 12239.

[3]Ibid., p. 12241.

Mr. Pike: . . . you used the word 'requirements' to justify your need, say, for more generals and admirals. Who requires that people be generals and admirals, in order to do certain jobs?[4]

* * *

Mr. Pike: . . . if a total of 535 people can run the House of Representatives and the Senate or participate in all the decisions made by the House of Representatives and the Senate, I am not sure it ought to take more than double that to make the decisions for the military.[5]

General Taber: To take an extreme example, sir, our nuclear field . . . this man has great responsibility, and he should be paid and given the rank that goes with it.

Mr. Pike: Paid, yes, but we are talking about rank. This is what I am trying to talk about, the grade structure . . . Just because things are more technical everybody has got to have more rank. I don't buy that argument, and I simply don't see how you can justify it.[6]

* * *

Mr. Stratton: . . . we have depreciated the value of these grades in the past 25 years, and everybody is aware of it.[7]

* * *

Mr. Pike: . . . You are asking for greater and greater sacrifices from less and less low-ranked people and justifying giving the higher rank and the higher pay to the people who don't get hurt, on the ground that we have got to retain them and that they are responsible. They have responsibilities. To me the entire concept that there is some greater responsibilities [sic] than going out and taking the biggest chance of getting killed, is a little hard to swallow.

I recognize that there have to be decisionmakers. But what I do not recognize and find very hard to accept, is that there have to be more people at company headquarters making decisions than there have to be out shooting the enemy and getting shot at . . .[8]

* * *

---

[4] Ibid. p. 122241.
[5] Ibid., pp. 12241-12242.
[6] Ibid. p. 12242.
[7] Ibid. p. 12242.
[8] Ibid., p. 12268.

Mr. Pike: . . . I cannot, for me, get over the fact that of the people who are getting killed in tha Army, the largest number were first lieutenants, among the enlisted men they were E-3's, in the Marine Corps, the largest number were second lieutenants, and among the enlisted men, they were E-2's. . . . I cannot see why we should pay technicians more than the people who are getting shot at. . . [9]

Mr. Stratton: What you want is what you have always wanted, to have a fellow spend 10 or 15 years of his life in the military and then go out on retirement or otherwise so you can have a young military force; that is basically what you want?

General Platt: Precisely, except for retirement.

Mr. Stratton: Except that creates a situation, increasingly we are beginning to realize it is just about unsupportable by the taxpayers. This is a fine conceptual idea, but the idea of a fellow going out and finding another career when his kids are beginning to go to college just doesn't make sense. . . A fellow doesn't leave the General Electric Company if he fails to get selected for vice president. He stays on, as assistant manager or whatever it is until he is 65 and retires. . .

Mr. Pike: This would be an area I am afraid in which I would simply say to my colleague from New York that I would have to disagree with him. I think the concept of keeping the Service young has got to be a goal for us to strive for and I would also have to say if we are going to have people become colonels after 20 years of service, I would hate to think of what the cost is going to be if we continue to keep them on at that rate. . . [10]

* * *

General Platt:. . . I think a possibility exists under the pay scale of the past. . .that there may have been quite properly the feeling on the part of some commanders that to help the individual enlisted man, he may have promoted him more rapidly to E-2 and E-3 than he would if the compensation levels were at the level that that law [pay raises] contemplates.

---

[9] Ibid., p. 12269.
[10] Ibid., pp. 12272-12273.

Mr. Cook: I think that is an honest answer.

Mr. Pike: I think it is a masterpiece of understatement.[11]

* * *

Mr. Pike: General Platt, in his press release . . . last week, Secretary of the Army Froehlke said that, 'We cannot have squads made up entirely of sergeants.'

My question is, ist't that exactly what we are in danger of becoming, an Army made up primarily of sergeants, or at least sergeants and corporals, with very, very few privates and PFC's in it?

General Platt: No, I don't believe we are in danger of becoming that, Mr. Chairman.[12]

Grade creep within a social institution can be verified, of course, by comparing the grade or pay structures of the organization or institution at different times, to determine whether one or more of the following situations has occurred at the later time:

1. The average grade of the entire organization has risen.
2. There are more persons in higher grades in comparison to those in lower grades.
3. There are more persons in the higher grade, or in the collective highest grades.
4. There is a significant upgrading in status of one or more grades (e.g., more persons within the same grade designated as supervisors).
5. Pay levels have risen substantially.
6. Total membership has increased substantially.

Indicators 1 through 4 above are fairly conclusive evidence that grade creep has taken place (in fact, Indicator 1 establishes it as a fact). Indicators 5 and 6, however, are not necessarily conclusive. In a number of situations, pay can be raised throughout an organization (e.g., a cost-of-living increase) without essentially disturbing the grade structure, and certain organizations expand in numbers while the grade structure, or organization profile, remains essentially intact.

---

[11] Ibid., p. 12300.

[12] Ibid., p. 12302.

Nevertheless, while recognizing the unreliability of accepting these latter two indicators as firm evidence that grade creep has occurred in any particular institution or organization, this study accepts these two indicators in a general way as evidence that grade creep probably has occurred or probably will occur within a reasonable time in the approaching future. The principal rationale for doing so is based on more than the saving of effort that would be devoted to justifying one complicated factor, and on more than the subjective impression of the author that the social and organizational dynamics involved do in fact appear to result in some form of grade creep following up large increases in pay and in overall membership. Of considerable weight in our rationale for accepting these two loose assumptions is the evident interaction of pay and grade movements among several or all large social institutions (some lagging behind others), as we hope to suggest in the course of this paper.

Indicator 6, increased size, deserves additional comment, particularly insofar as it relates to the observation in the 1972 Hearings that the configuration of the grade structure of the military establishment is changing "from pyramid to balloon," Galileo insisted long ago that no human institution can drastically increase its size and scale without changing its form, or shape, or internal proportions.[13] It seems reasonable in this instance to reverse this proposition and assume that no human institution can decrease its size drastically without altering its configuration. The great sociologists Max Weber, Emile Durkheim, and Talcott Parsons elaborated on Galilio's proposition:

> " . . . as institutions grow in size and in the functions they have to perform, specialized and distinct subsystems are created to deal with these functions. With the growth of specialized subsystems, one finds as well new, distinct problems of coordination, hierarchy, and social control."[14]

---

[13] D'Arcy Thompson. On Growth and Form. Cambridge: Cambridge University Press, 1963, Vol I, p. 27.

[14] Cited by Daniel Bell, "The Measurement of Knowledge and Technology," in Eleanor Bernert Sheldon and Wilbert E. Moore, eds., Indicators of Social Change: Concepts and Measurement (New York: Russell Sage Foundation, 1968), pp. 150-151. Cited hereafter as Bell, "Measurement."

A modern commentary on what is happening to the classic pyramidal form of organizations is provided by Professor George Berkley. In a chapter entitled "The Crumbling Pyramid," he asserts that a prototype emerging organizational form

> " . . . does not display the smooth compactness of the bureaucratic pyramid . . . it is a loose, amorphous, sprawling affair. . . constantly changing. It is perhaps best visualized as a squishy, uneven circle within which clusters of small units, like amoeba, constantly form and reform. At the center there is a more or less stationary cluster which is connected by lines to all the others. However, the center cluster, while it may more or less stay in the same general position within the circle, also undergoes changes in shape from time to time. . . " [15]

This analysis presents a configuration, however, which appears to be more a symbolization of authority structure and functional dynamics than of grade structure.

In any event, escalation in few or many positions and grade levels within an organization occurs ostensibly from the internal dynamics of the organization itself. The organization's recurrent revision of job descriptions, spans of control, lines of authority and responsibility, work patterns, and so forth, reflect the organization's perception of changing internal requirements stemming from changing missions assigned to the organization, changing internal technology, changing qualifications of the persons on board, and changes in the organization's institutional, group, and individual values, expectations, and attitudes.

Beyond internal response to self-perception, one principal suggestion for further study offered in this paper is that few, if any, organizations experience grade creep due exclusively to internal factors. Grade creep may occur in any one institution or organization because it is impelled by the dynamics in other institutions, in large sectors of society, or in the society as a whole. This paper, therefore, suggests that a wide range of interactions be explored, and itself endeavors to explore a number of interactions selectively, as a heuristic device.

Accordingly, it is suggested that grade creep may occur within one social institution (such as the military) because one or more of a host of events occur outside the institution, such as the following:

---

[15] George E. Berkley, The Administrative Revolution, (Englewood Cliffs, N.J.: Prentice-Hall, Inc. (SPECTRUM), 1971), pp. 24-25.

-proliferating technology may change the nature of similar work in all social organizations engaged in that kind of work. For example, automation may eliminate or transform certain jobs, certain kinds of work, certain occupational requirements, certain requirements for number of supervisors per worker, etc.

-political and economic contexts may change the relative proportions among major tasks. For example, the success of nuclear deterrence may impel shift of resources toward increased capability to cope with labor-intensive kinds of war.

-social developments may generate changing relationships within organizations. For example, widespread education raises both competence and expectations in a larger proportion of the available work force. Pervasive rises in standard of living may generate demands for shorter work periods and greater leisure, requiring more workers to accomplish the same work output.

-many other developments, if they occur, may affect the number and status of positions at any given level of organizations; e.g., general increases in disposable income; requirements for greater proportions of professionals and specialists; general decline in the acceptance of authority, in turn demanding greater time and attention from each executive to the interests of a work force of the same size, and perhaps requiring several executives on board to administer what one executive could previously administer in a more authoritarian context.

Once one turns his attention to such interactions, he is struck by the number and complexity of the interactions with the potential to affect grade creep within any one institution. It is our intention to examine a number of forces and trends at work in current society, and to speculate about their possible relationship to grade creep within the American military institution.

CHAPTER II

SPECIAL ASPECTS OF THE MILITARY CONTEXT

A. Unique and Quasi-Unique Aspects

As already mentioned, this paper leaves to the current specialists on military manpower, grade structures, job classification, pay scales, and tooth-to-tail ratios the analysis and explanation of internal perceptions directly involved in grade structures and grade creep within the military establishment today.[1]

---

[1]Recourse to current specialists can be profitably supplemented by recourse to analysts of broad military-related social trends, such as the comprehensive and seminal work of Morris Janowitz exemplified in his landmark book, The Professional Soldier. (Glencoe, Ill.: Free Press, 1960). Similarly, valuable analyses of the changing composition of military manpower structures are provided by Harold Wool, in The Military Specialist: Skilled Manpower for the Armed Forces (Baltimore: The Johns Hopkins Press, 1968). In Chapter III, "Military Occupational Trends Since World War II," Wool describes changes relevant to this theme of this paper, such as (p. 41) the increase in military electronics specialties as percentage of all enlisted jobs from 5.8% in 1945 to 14.2% in 1963, while the percentage of ground-combat positions declined from 24.1% to 14.1% over the same period. Wool writes (p. 33): "One of the consequences of the new enlisted career concept was the progressive elimination of the 'general duty' soldier, or the unskilled laborer as such, from the enlisted occupational structure." Contributing to this development is the Congress-urged "creeping civilianization" of the armed forces; according to Wool (p. 49), 114,000 military spaces in the armed forces had been converted to civilian spaces. Accelerating this trend of reducing the number and percentage of lowest-level jobs from the military structure have been a number of policies adopted in the early 1970's in furtherance of the "all-volunteer force" concept, such as eliminating kitchen police from the soldier's duties by hiring civilians to do that work.

Certain aspects of the military establishment, however, are considered to come within the purview of this paper--specifically the identification of certain characteristics of the military profession which distinguish it from other social institutions and which are among the primary determinants of its grade structure, and certain aspects of the relationship between military casualties and grades (related to the discussion of this point in the 1972 Hearings).

While the military institution shares with other American social institutions the preponderance of its values, methods, perspectives, and orientations, the division of labor among all social institutions allocates functions to the military which result in certain more or less unique environmental characteristics.

There is no need here to belabor the uniqueness of the primary military function to fight the nation's wars and to win them. For that purpose, constrained by a number of safeguards, the military is entrusted with the monopoly of the domestic instruments of international violence.

Various domestic police forces are entrusted with a near-monopoly of lower-level instruments of force and bear the primary responsibility, under duly constituted civil authorities, for maintaining domestic order by force. The armed forces are also called upon to back up domestic police forces, but infrequently; and the function is secondary for the armed forces and is not unique to them.

A military function ancillary to this primary function is sometimes overlooked: the maintenance and modernization of military skills and weapons, and the preservation of appropriate military ethos, during peacetime. Regardless of any current state of public support of the military, from low to high, from indifference or hostility to enthusiasm, the military must perform this function continuously.

Certain characteristics are not unique to the military establishment, but they are more important to the military than to most other institutions.

For example, while the military is one of the largest institutions in society (in wartime, far and away the largest), with an open-ended basis for full professional careers demanding various levels of intelligence, and with a full structure from the unskilled recruit to leader-executives at high levels of society, the nature of its primary function requires that the military emphasize youth and physical vigor. The differences with other social institutions in this regard are relative but a basic difference applies at every level.

While war-fighting (and readiness for war-fighting) exploits the physical vigor already inherent in large numbers of youth, the military function also requires physical vigor in incumbents at all its other age and grade levels; in the higher levels, and hence in the middle and later years of professional life, the retention of physical vigor requires, in general, that in comparison with comparable executives in civilian life, the military incumbents be relatively younger.[2]

Since the military educates and trains and applies intensive selectivity to its emerging executives throughout their professional careers, emphasis on executives who are younger than their civilian counterparts results in accumulation of substantial numbers of military leader-executives at higher rank levels, for whom there are fewer and fewer places in the grade structure and who are forced to terminate their professional careers at ages earlier than is common in civilian institutions.

This phenomenon of emphasizing relative "youth" is, for several reasons, within the military, exacerbated after wars by drastic overall retrenchment in the size of the military establishment, necessarily reducing the numbers of higher spaces available for the excessive number of persons on board who already possess higher rank.

This situation is further complicated by other factors more or less peculiar to the military. One is the rank-in-the-man concept long basic to the military, in which pay and numerous aspects of status are tied firmly to the personal rank possessed by the individual.[3] This contrasts with the rank-in-the-job concept prevalent in nonmilitary institutions; for example, the person occupying the position of Assistant Secretary of State, or Senator, or Vice President of General Motors, possesses the status and perquisites of the position only so long as he occupies it. When he leaves, the status and perquisites are no longer available to him; he usually reverts to being an ordinary citizen (in practice, some residual nominal perquisites may be extended to him in certain contexts as a matter of courtesy).

---

[2] A later chapter cites the current attainment of top executive status in increasing numbers of civilian hierarchies at younger ages. However, this trend is quite uneven; the generalized requirement remains valid, that top military incumbents be relatively younger than civilian counterparts.

[3] This distinction may need some qualification. Most perquisites available to the military executive are associated with his rank. Not all of them are, however; some, as with his civilian counterpart, are associated with his position.

When an individual becomes a colonel, however, he remains a colonel wherever he goes (unless, of course. he is removed for cause); he may in a minority of instances be an "indian" for a higher-graded chief, but in the majority of instances he will be himself a chief in the hierarchy. Even in infrequent cases in which the individual is considered less than competent enough to cope with some especially demanding local job assignment (and may perhaps be given an innocuous job "out to pasture"), he continues to receive the pay and generalized institutional perquisites of all colonels everywhere.

Another factor is the unique nature of military expertise, which can be refined and enhanced only within the military establishment. There are no counterparts to management of large-scale organized violence within any society. Therefore, sources and opportunities for lateral entry into the military decease as higher military levels are involved. The mobile executive, changing specialties, companies, and even industries on the way up, is not compatible with the requirements for the gradual acquisition of military expertise. The almost-inflexible route to becoming a major general in command of a division is through channels of service in command of companies, battalions, and brigades.

There are, nevertheless, conterpressures and paradoxes present in the military context. I have already pointed out the institutional emphasis on relative youth, increasingly emphasized as higher levels are reached, in relation to civilian counterparts. But this emphasis is realized only within highly formalized and regularized patterns. Except in wartime, the promising military leader-executive at the age of 35 will be no higher in rank than major (or possibly, lieutenant colonel). He may receive highly desirable assignments considered better than the normal run of jobs available to majors (say, for example, that of a White House Fellow, in which rank is relatively immaterial); but he remains a major and is not eligible (normally) for jobs designated specifically for lieutenant colonels, and certainly not for colonels' or generals' jobs. Accordingly, the phenomenon of civilian life, not common but not rare, either, in which an individual aged 35 is selected as director of a government agency, or major of a metropolis, or vice president of a foundation, or Assistant Secretary of State, or general manager of a major division of IBM, does not, and cannot, in peacetime, occur in the military context.

Still another factor, but one exerting pressure in the reverse direction, is that the uniqueness of military expertise applies with full force only to the mainstream of combat units within the military establishment, and only in varying lesser degrees to the numerous other activities, specialties, career patterns, support units, and administrative contexts within the military establishment. Since many of these activities and organizational elements are reasonably compatible counterparts of similar civilian activities, it would appear practicable to contemplate a certain amount of lateral entry in selected specialties into the officer field grade and higher NCO levels.

There are certain other aspects which, among social institutions, are relatively peculiar to the military establishment. One is the scale and suddenness of expansion and contraction (as in, for example, sports ogranizations in the off season, or some schools in summertime); but most such changes are regularly cyclical and are fully accounted for in annual planning. A few other organizations, such as the Red Cross, experience sudden expansion on occasions of sudden disaster; but none experience sudden expansion on the scale of the armed forces upon the outbreak of war, as the following table demonstrates:

Military Personnel on Active Duty[4]

1860	27,958	1916	179,376
1861	217,112	1917	643,833
1862	673,124	1918	2,897,167
1863	960,061	1919	1,172,602
1864	1,031,724	1920	343,302
1865	1,062,848		
1866	76,749	1940	458,365
		1941	1,801,101
1897	43,656	1942	3,858,791
1898	235,785	1943	9,044,745
1899	100,166	1944	11,451,719
		1945	12,132,455
		1946	3,030,098
		1947	1,582,999
		1950	1,460,261
		1951	3,249,455

Sudden expansions and retrenchments on such scales intensify numerous problems of military manpower and personnel administration, such as distruption of expected career patterns, career progression through successive grades, training, and utilization of specialists, and so on. Great numbers of persons are drawn in from civil life; some do very will, and choose to remain in the military. Two factors of chance exert powerful change on existing members; one is the chance of becoming a casualty, terminating (for the unfortunate minority) further participation in career progression. The other factor, producing in many cases rapidly accelerated grade progression, is the happenstance of timing of the outbreak of war, occurring at different career stages for different groups of existing members.

---

[4]US Department of Commerce, Historical Statistics of the United States: Colonial Times to 1957, (Washington: USGPO, 1960).

For example, General Maxwell D. Taylor recalls[5] his spending 14 years as a lieutenant, and General Alfred Grenther's spending 17 years in that grade; however, officers of that vintage mounted rapidly into general officer grades as World War II got underway. Other officers in early career stages as WW II opened, passed from 2d lieutenant to colonel within 4 years, and then stayed in that grade for 26 years. The aspects stressed here, largely unique to the military, is the happenstance that determines such wildly variant patterns, depending upon whether one is in early or advanced stages of career at the time war breaks out.

Another aspect of such "chance" expansions and retrenchments, as well as of long-term conditions of organizational stability, is the residual effect of generational experience on cohorts. The demands of some positions undergo certain transformations as organizations expand or contract many fold. One officer who may have served for over 20 years in a small Army develops competence in evaluating grade-structure problems along a particular set of perspectives; he develops competence in coping with the prevailing expectations not only of members but also of new entrants. Another officer, who may have served through more than 20 years of the Cold War, in an Army maintained at expanded levels, develops different perspectives toward grade-structure problems and associated expectations. Still another officer may have served in one kind of Army or another that experienced one tremendous expansion, and in the process he may have developed a different set of perspectives. The point is that what constitutes optimum grade structure, and which career expectations relate to grade structures and progressions, depend to a large extent upon the experience of those (including members of Congress who evaluate military programs) who at any particular time occupy positions influential to devising, advocating, and approving one grade structure over another. Especially those who confront the cutting edge, or early manifestation, of changing expectations.

---

[5] 1972 Hearings, p. 12228.

Two other characteristics apply with some degree of singularity to the military institution. One is its classification as a "total institution."[6] The relationships among military members are not, as in most social institutions, confined to one or two categories, but normally extend across a wide spectrum of daily life. Demands upon leaders, supervisors, and executives in the military environment are more comprehensive than in most other social institutions, justifying expanded dimensions in assessment of their position in their grade structure.

Another distinctive characteristic of the military institution, partially but not wholly rooted in vulnerability to sudden large-scale expansion and contraction, is relatively heavy turnover of lower-grade personnel. The unique wartime incidence of casualties obviously induces heavy turnover. But even in peacetime, few, if any, other social institutions are forced to cope with personnel turnover on a comparable scale. Naturally, the American penchant for geographical and organizational mobility plays some part.[7]

---

[6]The term "total institution" was apparently generated by Erving Goffman, who, after a year of study at St. Elizabeth's Hospital in Washington, DC, produced the book Asylums (Garden City, NY: Anchor Books, 1961). One of his definitions of a total institution is: "A place of residence and work where a number of individuals in similar situations are cut off from the wider society and lead an enclosed, formally administered life." Ailon Shilon ("Sanctuary or Prison--Responses to Life in a Mental Hospital," in Samuel F. Wallace, ed., Total Institutions, New Brunswick, NJ: Transaction Books, 1971,p.9) echoes other commentators in stating, "The key fact of the total institution is that many human needs of whole blocks of people are under bureaucratic control." Others classified in various contexts as total institutions include the armed forces, prisons, boarding schools, monasteries, seminaries, convents, and colleges. However imprecise this category may be in relation to some of these diverse institutions, the armed forces seem fairly classified in this instance. In contrast to work organizations, which constitute the bulk of society (industry, commerce, political office, business, professions, etc.), the armed forces are concerned with many facets of the entire daily environment of members--housing, feeding,clothing, schooling, medical support, religious and recreational facilities, etc., modified by individual freedom of participation in various aspects in different internal circumstances.

[7]Annually, 8 1/2 million Americans are involved in 11 1/2 million job shifts, half of them to a different industry and different occupation. Also annually, 11 million Americans move their residence to a different county, half of them to different states. ("Automation and Unemployment,"op. cit, p. 26.)

Perhaps colleges and seasonal work organizations (e.g., harvest workers, recreation and sports organizations) could be considered comparable in this aspect; but their structures and systems are formally devised to take account of their predictable scales and forms of turnover.

The armed forces, however, must emphasize youth replenishment to an advanced degree and at the same time administer and train each entering member on the scale consistent with a total institution. Even in peacetime, most entrants into the lowest enlisted rank are relatively short-term members. Conscription provides preponderantly short-term entrants. Thus, grade structure is influenced by the need for the military to remain competitive in attracting new entrants from the whole society, while maintaining appropriate relative status and pay conditions in a grade structure in which large proportions of stable career incumbents present themselves for entrance into successively higher grades.

Other characteristics, not unique to the military establishment, are exemplified within the military to a notable degree. One is the deliberate educational progression, especially among officers, involving not only regularly scheduled attendance at staff and war colleges, but increasingly diversified acquisition of graduate degrees in civilian universities.

Another such characteristic relevant to military grade structure is the constant evaluation and competitive selection system to which military professionals are subject throughout their careers. Excepting perhaps the Foreign Service, no other social institution subjects its personnel to such relentless and intensive evaluation and selection processes, to include the feature known as "selection out." One contrast that might be suggested at the other extreme is that of the academic profession; normally resentful of any direct evaluative process, the member of the academic profession, once having achieved tenure, is relatively unevaluated thereafter (I am aware that the profession is not totally without resources to cope with declining performance, but the resources are loose and difficult to apply).

Are such observations relevant to the problem of grade creep? If so, what is the nature of the interaction between each factor and the overall problem being examined here?

The following might be considered significant interactions:

The primary function of war-fighting creates an imperative that individuals suitable in age, intelligence, physical vigor, education, and temperament be selected and improved, and distributed properly throughout a logical military structure, and that, in devising grade structures for a military establishment, the interests of individuals concerned throughout their careers with the primary, war-fighting elements of the military establishment not be subordinated to those of any other elements of the military establishment.

The peacetime function of preserving and modernizing military expertise and ethos suggests an imperative that, despite other activities of the society in general and the military in particular that might become transcendent in attracting emphasis (e.g., technological advances, space travel, evolving patterns of work, social justice), the grade structure, pay scales, and progression of the military be maintained in such condition as to ensure adequate and systematic staffing of the military with individuals competent in current terms.

Emphasis on youthful vigor requires that grade structures and planned patterns of progression provide for maintenance of carefully determined, relatively youthful age brackets for each grade up through the highest grade levels, in the primary war-fighting elements of the military; in turn, this feature requires that grade structures provide suitable means for redirecting those competent individuals who lose out in the competition for higher levels of war-fighting elements, through selection out with severance pay, retirement, or reassignment to other elements of the military establishment; concurrently, this feature does not preclude the development of suitable (alternative) grade structures and progression patterns for non-war-fighting elements of the military establishment which do not require relative "youth" and which involve highly important skills.

The phenomenon of accumulation of competent, higher-grade persons excess to the military establishment's needs in times of substantial retrenchment suggests that grade structures provide for reassignment, severance, or retirement in ways which give reasonable warning of impending probable alternatives to those individuals likely to be affected.

The contrast between "rank-in-the-men" and "rank-in-the-job" concepts contains a number of possibly disturbing implications for the military establishment in the future, but none which appear to affect grade structure drastically at this time.

The requirement that military expertise in war-fighting be acquired only within the military precludes lateral entry into war-fighting elements; this feature, per se, should not preclude grade structures that permit lateral transfers, if desirable, into non-war-fighting elements of the military establishment.

The well-established fundamental limitation of progression in military grades inexorably through a formalized one-step-at-a-time structure appears to preclude the attainment of very senior grades at early or middle ages (modified by modest acceleration of discrete steps for few selected individuals, as is provided for now). This practice admittedly precludes progression comparable to that of high selection occurring occasionally in civilian life; on the other hand, it also precludes long-term incumbency of high grades that blocks the ever-fresh upward (and regular) flow of oncoming eligibles (there are, of course, other relevant factors of advantage and disadvantage).

The phenomenon of possible sudden massive expansion and contraction appears to underwrite the requirement that basic grade structures and patterns be soundly conceived, applicable to large, small, expanding, and contracting forces. (Such traumatic events occur, however, in periods of such great significance and social and political upheaval that revisions of grade structures and patterns are invariably undertaken at the time, in order to fit the changed national circumstances, and cannot be prejudged).

The factor of chance in national, institutional and individual affairs, particularly in regard to the incidence of war in the nation's life and the incidence of casualty in the military individual's life, cannot be predicted, or forestalled, and cannot be related to problems of grade structure in a specific context.

The foregoing are, of course, not the only important considerations affecting grade structure within the military environment. Notably absent, for example, are considerations which the military experiences in common with other social institutions. A number of such considerations will be taken up in subsequent sections of this paper, but one important common characteristic will be singled out for attention here: the pluralistic internal nature of the military institution. This is a little-discussed and perhaps little-realized aspect of the military, to which military professionals themselves have not paid very much attention. Understandably, the military profession has stressed the uniqueness of its primary function, its common ethos, its primacy to the herioc image, and the integrity of its single status structure throughout its institution. These factors are not disappearing, but their predominance in characterizing the military as monolithic is eroding. As functional specialization proliferates inexorably, it is seen more and more clearly that the military establishment, no more than any other major social sub-entity, is not a monolithic institution.

An institution as large and complex as the military establishment is necessarily being discerned more and more as a complex system composed of diverse sub-systems--combat units; support units; supply systems; procurement systems; financial systems; personnel administration; training networks; recruiting, testing, and classifying systems; court systems; educational systems; reserve forces; dependents and their support; retirees; veterans; the young and the elders; and so on.

Perhaps differentials among most of these sub-systems are not as distinctive as they are in the sub-systems of other major institutions; but differentials among large sub-systems exist and have effect in motivation and commitment, standards of recruitment and evaluation, expectations, performance, division of labor, and other critical aspects of the military.

Moreover, the military shares with other major social institutions (e.g., the campus, the seminary, the health-care system) the experience of increasing erosion of isolation and separateness. More and more, internal administration is forced to interact with internal factors and the external environment.

As Warren Bennis, president of the University of Cincinnati, describes the situation:

> The greatest problem facing institutions right now is not so much the internal politics, bureaucracy, supervision, and so on. Instead, it's the concatenation of external forces that are impinging and imposing on the corporate or public-sector organization--that is, events outside the skin boundary of an organization.... Relations with these outside forces take, I should say, about 80 percent of my time...quite often what the external environment is pressuring us to do and what the internal audience or constituents want to do or feel right about doing are absolutely and totally divergent.[8]

Thus, while retaining aspects of uniqueness, the military institution shares with other institutions the experience of eroding identity of its monolithic condition and increasing vulnerability to interaction with its external environment. All of these unique and common characteristics have important effects upon the military's ability to develop a judicious and equitable grade structure.

Numerous forces in the environment external to the military are exploiting the channels of interaction; we shall attempt to identify a number of such forces in subsequent chapters.

B. Casualties and Grades

In reference to the point raised in the 1972 Hearings, as to "Who gets shot at" and who suffers the casualties and deaths in battle, there are different perspectives involved in contemplating absolute numbers and proportional numbers.

Before entering this area, I must say that discussion of battle casualties sometimes appear insensitive; and herein I do not mean to appear unaware of or indifferent to the pain and loss endured by each single casualty and his family. Each integer represents a once-living American, loved by kin, who contributed more than his share to the common weal. Nevertheless, we are involved here with mass statistics.

---

[8]"Conversation with Warren Bennis," Organizational Dynamics, Winter 1974, pp. 59-60.

Absolute numbers are readily come by, but proportional statistics are difficult to obtain. Without a pretense that the following figures are comprehensive, they are offered as being germane to those questions raised in the 1972 Hearings on grade creep, involving the issue of who gets killed and wounded in American wars. Do only privates get killed? Or only privates and second lieutenants? Who suffers the greatest proportional casualties; that is, are one's chances of surviving a war dependent upon one's grade--greater if one is an enlisted man than if one is an officer?

The following table comes from the most comprehensive analysis[9] of World War II Army casualties, which, despite its thorough analysis according to a number of categories, does not provide proportional statistics. In any event, these figures make clear that not even American general officers are immune to death in battle.

---

[9]US Department of the Army, Army Battle Casualties and Non-battle Deaths in World War II, 9 December 1941-31 December 1946, Final Report, (Washington: Office of the Adjutant General) pp. 70, 115.

	Total Battle Casualties (incl KIA)	Killed in Action (KIA)
All Army, World War II	936,259	225,618
Commissioned Officers	93,074	35,340
Warrant Officers	2,924	1,250
All Army, Enlisted	840,261	190,298
General Officers	72	24
Colonels	403	112
Lieutenant Colonels	1,192	389
Majors	1,978	761
Captains	9,669	3,332
1st Lieutenants	35,003	13,070
2d Lieutenants	44,757	16,402
Master and 1st Sergeant	3,879	922
Technical Sergeant	24,613	7,635
Staff Sgt & Technician, 3d Grade	84,540	24,147
Sgt and Tech, 4th Grade	92,487	23,532
Corporal and Tech, 5th Grade	54,250	16,532
Private 1st class	302,558	63,670
Private	278,942	53,840

Such gross figures need to be compared with total number serving, number serving in each grade, branch, unit, theater of operations, and so on. Unfortunately, such figures are hard to find. In any event, they show conclusively, for what the point may be worth, that officers and non-commissioned officers, generals and master sergeants, shared appreciably in the hazards of World War II. It is interesting to note, in passing reference to pyramidal structures, that men in the next-to-lowest enlisted grade suffered higher casualties than those in the lowest grade.

The Army Almanac[10] gives 10,420,000 as the total number who served in the Army in World War II, and highest one-term strength, as of May 1945, as 8,293,766, with 781,406 officers (exclusive of nurses and warrant and flight officers) and 7,398,940 enlisted men. Linking total strength with total casualties results in an overall casualty rate of approximately 9 percent. Distributing total strength among officers and enlisted men in the same proportion as in the one-time strength (and linking the results with officer and enlisted casualties) provides the approximate statistics that 9 percent of the officers and 9 percent of the enlisted men suffered casualties in World War II--hardly a lopsided incidence of casualties in the two categories.

---

[10] The Army Almanac, (Harrisburg, Pa. The Stackpole Company, 1959), p. 614.

One more special statistic[11] concerns casualty rates among West Point graduates (all Army officers, naturally) during World War II:

	Number Served in Army	Battle Deaths	Battle Deaths per 1,000
All Army	10,219,565	228,869	22.4
Enlisted Men	9,265,000	193,076	20.8
Officers	954,565	35,793	37.5
West Point Graduates	9,802	487	49.4
West Point Graduates less Class of 1945[12]	8,962	487	54.3

While the foregoing figures are not broken down by grade, they do shed some additional light on the relative incidence of battle deaths among gross categories of grades. Comparable statistics for the Korean War doubtless exist but could not be found for this project. Do persons in higher grades (and receiving higher pay, as was stressed in the 1972 Hearings) suffer the same or worse chance of becoming a casualty in war as those in lower grades? It appears that they do.

Comparable statistics for the Vietnam War will be highly difficult to adduce, primarily because for the first time the United States adopted a policy of limiting the war-zone tour to one year, rather than retaining persons in the Army and in the combat zone for the duration of the war. Whatever merits or demerits of that particular policy, the extension of the war in time caused many professional officers and NCO's to serve two, and some three, tours in Vietnam, serving (presumably) in a higher grade each time, yet each time subject to different probabilities of grade, circumstance, and chance as to whether they would become casualties.

It is to be hoped that more sophisticated analytical data that the foregoing will become available in time, shedding further illumination on the relationship between grade, casualty incidence, and related factors. One further issue might be mentioned--one which is difficult to extricate from the complex context of grade creep, but which was referred to somewhat in passing in the 1972 Hearings. That issue concerns the pay, irrespective of grade, of persons who are the "most shot at" in war.

---

[11] Register of Graduates and Former Cadets, United States Military Academy, 1802-1949, (New York: West Point Alumni Foundation, 1949), p. 404.

[12] Assuming that no graduates of June 1945 reached battlefields by the end of World War II.

Should, or could, combat fighters, even though they were to remain largely in low grades, be paid more than other soldiers? Proposals to do so surface from time to time.[13] Addressing that issue involves highly sensitive strands of citizenship and obligation, equity and justice, degrees of relative risk, and, in the end, moral issues. Is monetary reward the primary criterion with which to evaluate relative contributions to the nation in war? It may be sufficient merely to raise the issue, for it will not be further addressed here.

In an earlier section, we quoted expressions of concern by members of Congress over the apparently disproportionate vulnerability of the lowest graded enlisted men to becoming casualties in war. One shares that concern, but for all Americans who become casualties. However, to some extent the issue is peripheral to this paper's central issue: the background of grade creep.

In many respects, it is not one's grade[14] that determines the likelihood of becoming a casualty, but one's location and one's unit. The infantry, for example, is that element of armed forces whose function it is to close directly with the enemy; it is, therefore, predictable that most casualties will occur among all persons, whatever their grade, who take up active presence within the areas of infantry units engaged in combat. It is in the nature of human organization that the majority of men in such circumstances will be young, unskilled beyond basic combat capability, and in grades lower than a minority occupying leader positions in some modest hierarchy. The situation is no different in the armies of the adversary, or those of allies, or indeed in any.[15]

---

[13]The author recalls one that reached the Pentagon Office of G-3, HQ Army Ground Forces, in the spring of 1946, proposed by LTC James Peale, suggesting that combat infantrymen be paid double pay of other soldiers, and that infantry platoon scouts be paid triple the pay of other soldiers.

[14]In various circumstances of battle, of course, persons in the status (grade) of leaders are deliberately sought as high priority targets.

[15]The unprecendented circumstances of the Vietnam War in American military history should be noted, including the advanced technology involving war-fighters in the Air Force and Navy. In contrast to the nature of Army and Marine Corps casualty incidence, as cited in the 1972 Hearings, Air Force, and Navy Air casualties were overwhelmingly among air crews, especially pilots, who were in high grades. The large number of Air Force colonels and Navy captains among returned POW's substantiates this observation.

Could one reasonably expect the situation to be otherwise? Is it not fanciful to imagine squads containing 2 privates and 8 sergeants, instead of the reverse? Would one not expect the same number of casualties per squad either way? Would it be regarded as more suitable if most casualties were sergeants, rather than privates? If so, consider the magnitude of the grade creep, or grade inflation, that would have to occur in advance to produce results! Consider the problem of replacement of high grades in overwhelming proportions!

Thus, the approximately pyramidal grade structure of combat units still appears logical, as it occurs in practically every other organized activity. The chief physical risks in building skyscrapers are borne by the large majority of steelworkers and their counterparts, not by architects, engineers, and executives of construction firms. The great majority of those regularly exposed to the risks of mining coal are the "rank and file" of miners, not the higher-graded engineers and managers. Policemen and firemen who become casualties in the line of duty are preponderantly not the higher-paid, higher-status police and fire officials. Ground combat is still a labor-intensive activity. What alternative grade structure is feasible?

Another aspect of combat which merits greater analysis than can be afforded here is that involved in equating those who suffer casualties with those who "get shot at." They are not the same group, though one necessarily includes the other. The great majority of men who are shot at in combat live through the experience and do not become casualties. Analysis of the ages, grades, and times in service of those who become casualties does not necessarily reveal typical data for all those who have been shot at. Numerous officers and NCO's were shot at frequently in Vietnam after surviving being shot at in World War II and Korea. They were exposed to the very same risks in Vietnam as those who became casualties in the same location.[16]

---

[16]The same caveat applies in all high-risk occupations. In a crisis situation, the police private may be shot at and killed, and not the police captain. But the police captain may well have been shot at previously on numerous occasions but survived to achieve high place. In the course of his professional life, he may have been shot at many times more than any private in his force. Can one draw any useful conclusions from this concerning the appropriate pay and status of police captains?

The incalculable risks of combat are heavily weighted with chance (the random impact of one artillery round, for example). To be sure, those in combat are largely there by chance in the first place (e.g., the eruption of war coinciding with their age-group's arrival at the war-eligible level; the vagaries of Selective Service; assignment to Vietnam rather than to peaceful Europe; etc.).

The point here is that it may be suitable to separate the issue of who become casualties from the issue of grade structure and grade creep--each issue, to the extent possible, to be considered on its own merits.

CHAPTER III

THE BROAD CONTEXT OF GOVERNMENT

A. General.

With this chapter, we relinquish attention to unique characteristics of the military establishment, and take up broader contexts of American society, contexts in which other major and minor social institutions experience political, economic, social, and organizational dynamics more or less in common with the military establishment.

The first such context to be examined is that of American government, particularly the Congress and the Executive Branch, in order to discern, if feasible, indications of grade creep among civilian grade structures of government.

Before taking up these subjects, we may benefit from a quick analysis of the factors which enter into the determination of the status and compensation of a particular position in any formal social organization.

In analyzing compensation for work, the Public Personnel Administration[1] provided a comprehensive list of factors (somewhat revised here) which exercise important influence. Each of these factors is relevant to grade structure, grade distribution, and grade creep in modern organizations, as well as to direct compensation for each level or position:

-The education required before and during incumbency

-The training required before and during incumbency

-The difficulty of the work

-Prestige value of the job

-Hazards encountered

-Agreeable-disagreeable factors

-The standard of living required

---

[1]Louis J. Kroeger; Elwood Ennis; Elmer V. Williams; Hal E. Martin. "Pricing Jobs Unique to Government". (Chicago: Public Personnel Administration, no date, apparently pre-1968), pp. 12-13.

-Convenience-inconvenience factors (odd hours, excessive travel, etc.)

-The social significance of the work

-Competitive rates in organizations drawing on the same manpower pool

-Plenty or scarcity in the available manpower pool

-Mobility in the manpower pool

-Effects of variable compensation on morale

-Turnover rates

-Responses to recruiting

-Gains in quality possible through compensation or other factors

-Promotion opportunities

-Transfer opportunities

-Retirement opportunities

-Responsibility, including recognition of different degrees, depending on involvement with personal rights, property rights, public funds, custody of records, production, supervision of others, initiative producing expected consequences, and the execution of government obligations.

Among these factors, the remainder of this chapter briefly considers such overlapping factors as difficulty, hazards, agreeable-disagreeable aspects, convenience-inconvenience, promotion, transfer, retirement, and responsibility. Later chapters undertake to examine data relevant to education, training, prestige, standard of living, social significance, manpower pools, responsibility, and organizational dynamics likely to affect organizational grade structures in the broad currents of American cultural and social change.

B. Civilian Employment and Congress.

In reference to expansion of manpower rolls, and escalation in grade structure, the following table records expansion in civilian employment in the three branches of American Government over the span of eight recent years; that is, changes in number of civilians

employed by the Federal Government (exclusive of CIA, National Security Agency, Public Service Career, and Youth Programs), between 1965[2] and 1973[3]:

	1965	1973
Total	2,527,941	2,765,662
Legislative Branch	25,947	34,793
(Congress)	(9,296)	(14,863)
Judicial Branch	5,964	8,740
Executive Branch	2,496,090	2,722,129
Executive Office of President	(2,871)	(4,744)
White House Office	(333)	(542)

Among prominent American institutions with which the military institution might be compared in certain aspects relevant to this paper is the Congress itself. One such aspect is grade creep.

Congress is itself unique in certain characteristics, including several that might be considered related to grade creep. Perhaps the outstanding characteristic in this regard is that the body of top executives, the membership of Congress itself (the "tooth"), is limited by statute to a fixed figure which cannot be exceeded. In 1954, Congress consisted of 96 Senators, 435 Representatives, and 3 Delegates; in 1971, Congress comprised 100 Senators (Alaska and Hawaii had been admitted as states in the interim), 435 Representatives and 2 Delegates. Grade creep is indicated, however, in that the support staff for Congress (the "tail") in 1954 numbered 5,000, but in 1971 numbered 13,500 (270% of the 1954 figure).[4]

Comparing the Congressional Staff Directory of 1959, 1960, 1970, and 1973, it appears that the Senate had 24 Committees and 116 Subcommittees in 1960, and 25 Committees and 123 Subcommittees in 1970.

---

[2] World Almanac and Book of Facts (New York: Doubleday and Company, Inc. 1966 edition), p. 99.

[3] Same source, 1974 edition, p. 476.

[4] Chart, Congressional Reference Service, 1974 (chart not otherwise attributed).

In 1960, the staffs of Senate offices (President Pro Tempore, Majority Leader, etc.) numbered 87, in 1970, 94; Staffs of Senate Committees numbered 281 in 1960, but 402 in 1970; and Subcommittee staffs increased slightly from 269 to 275 over the decade.

Examining the office staff of each Senator (or his replacement) in 1960 and 1970, we find that the total of employees for all Senators was 1203 in 1960; by 1970, the total had increased to 1774 (an increase of 67 percent). While the staffs of 3 Senators had remained the same, and while the staffs of 10 Senators even declined over the 1960's, the staffs of 87 Senators increased. One individual's decrease was fairly dramatic--from 17 to 8; but there were also a number of dramatic increases in individual Senators' offices; e.g., from 6 to 18, 9 to 23, 14 to 30, 14 to 31, 17 to 34, 19 to 37, 18 to 42, and 16 to 42.

It is interesting to compare the specialties, statuses, and titles in each Senator's office (though the Senator himself might have been replaced) over the decade from 1960 to 1970. In one office in which incumbents changed, the staff increased from 14 to 30; in 1959, this office staff was identified as containing 1 administrative assistant, 1 executive assistant, 1 personal secretary, 1 legislative secretary, a case worker, 5 secretaries, 1 clerk, and 1 untitled; in 1973 that same office contained 1 administrative assistant, 1 executive assistant, 3 press assistants, 1 personal secretary, 1 office manager, 2 special assistants, 1 legislative assistant, 1 assistant, 1 case worker, 1 receptionist, and 1 legislative aide.

Another office, occupied by the same Senator both times, listed in 1959, 1 administrative assistant (same in '73), 1 executive assistant (same in '73), 1 appointment secretary, 1 staff assistant, 1 personal secretary (same in '73), and 4 secretaries; in 1973, in addition to the 3 noted above, the office listed 1 press secretary, 3 legislative assistants; 1 legislative assistant; 3 legislative secretaries; 1 State assistant: 2 case workers; 1 secretary to administrative assistant; 1 personal assistant; 2 receptionists; 2 secretaries, 1 mail clerk; and 1 district assistant.

On the House of Representatives side, one notes that in 1959, the Armed Services Committee had 37 members and 7 subcommittees; in 1973, 43 members and 8 subcommittees. The Committee Staff of 10 in 1959 listed 1 chief counsel, 3 counsels, 1 committee secretary, 4 secretaries, and 1 bill clerk; in 1973, the same Committee's Staff of 23 comprised 1 chief counsel, 4 counsels, 4 professional staff members, 1 executive secretary, 10 secretaries, 2 clerical staff assistants, and

1 messenger (one subcommittee with separate staff increased staff membership from 5 to 6).[5]

Representing the First District of New York in 1959, Mr. Stuyvesant Wainwright listed 7 persons on his office staff, all without differentiating job titles; in 1973, Mr. Otis Pike, representing the same district, listed 11 persons: 1 administrative assistant, 5 secretaries, and (in home district office) 3 field representatives, and 2 secretaries.

One notes the great variety of offices serving the Congress, and staff changes in some of them from 1959 to 1974. For example, in the House: Office of the Speaker of the House (staff of 8 in 1959 to staff of 25 in 1973); Office of the Clerk of the House (from 69 to 50); Office of the Sergeant at Arms (from 13 to 15), Office of the Minority Sergeant at Arms (0 - 0, no change); Office of the Doorkeeper (0 - 0, no change), Office of the Postmaster (from 2 to 8); Office of the Minority Postmaster (0 - 0, no change); Office of the Legislative Counsel (16 to 30); Office of the Majority Leader (8 to 6); Office of the Minority Leader (3 to 11); Office of the Majority Whip (from 3 to 3, no change); Office of the Minority Whip (from 2 to 1).

Some of the miscellaneous agencies directly supporting the entire Congress maintained comparable staffing in 1959 and 1973, such as the Architect of the Capitol, the Capitol Page School, and House Majority and Minority Rooms. Others appear to have expanded staff, such as the Office of the Physician (from 7 to 20).

It is unnecessary to detail all the changes in job titles and changes in staff status between 1959 and 1973; but citation of a few selected examples may serve a purpose: The Office of the House Legislative Counsel listed these staff positions in 1959 and 1973 respectively: deputy legislative counsel (0 to 1), assistant counsel (7 to 10); law assistant (3 to 8); clerk (1 to 1), assistant clerk (4 to 9); clerk typist (1 to 0); clerical technician (0 to 1).

The Captiol Police in 1959 listed 1 chief, 1 captain, 1 admin clerk, 1 traffic and communications clerk, 1 property clerk, 7 lieutenants, and 11 sergeants;[6] in 1973, the Congressional Staff Directory listed 1 chief, 2 assistant chiefs, 6 captains, and 13 lieutenants, but not sergeants or below. However, the 1973

---

[5] Some variation in listed staffing is noted between the Congressional Staff Directory and the Report of the Clerk of the House from 1 January 1971 to 30 June 1971, USGPO, 1971. The latter report is probably more accurate.

[6] Congressional Staff Directory 1959. The 1958-1959 Report of the Secretary of the Senate (pp. 94, 96, 139-140) lists 1 captain, 2 lieutenants, 2 special officers, 7 sergeants, and 134 privates.

Report of the Secretary of the Senate[7] lists additions to the foregoing as 49 sergeants, 4 detectives, 17 technicians, 13 plainclothesmen, 6 K-9 officers, and 332 privates.

Substantial increase has also been experienced in the larger agencies supporting Congress, namely, the Congressional Research Service, General Accounting Office, Government Printing Office, and the Office of Technology Assessment.

The foregoing account is not given in order to embarrass anyone. I have no doubt whatsoever that Congress as an institution, and each individual member of Congress, needs not only the increasing staff support that has been provided over recent years, but also probably needs additional support. These data are provided in order to indicate the pervasiveness of escalation of numbers and statuses in all major social institutions, not excluding Congress and the rest of the United States Government.

C. The Executive Office and Executive Branch

A prominent national journal observed in 1972 that it is difficult to obtain comprehensive statistics on staffing of the Executive Office of the President. The Report said that the Nixon Administration alone had created 124 new suboffices. It noted the gradual extension of floor space occupied by the Executive Office in Washington to include the Executive Office wing of the White House; the entire Executive Office Building that used to house the State, War, and Navy Departments; the entire multi-story office building built behind Blair House; and the series of old houses overlooking Lafayette Square. Between December 1968 and December 1971, Executive Office strength grew from 1992 persons with a budget of $30.9 million to 2419 persons with a budget of $63.3 million. The White House Office included 14 officials at the salary level of $42,500 (equal to the pay of a member of Congress).[8]

The entire Government, in 1972, included 11,000 persons occupying eight grades and salary levels from GS-16 ($29,680 in 1972) to Cabinet Member in Executive Level 1 ($60,000).[9] Of the 11,000, 7,000 were in the Executive Branch of Government.

---

[7] U.S. Congress. Report of the Secretary of the Senate. July 1, 1973 to December 31, 1973 (Washington: USGPO, 1973), pp. 14-22.

[8] U.S. News and World Report, April 24, 1972.

[9] US Congress House. "The Federal Executive Service," Hearings Before the Subcommittee on Manpower and Civil Service of the Committee on Post Office and Civil Service. 92nd Congress, 2nd Session, April, 1972, p. 1.

D. Federal Civil Service.

The following data in this section comes primarily from Congressional Hearings of 1972 on the Executive Service. Up to 1947, the top grade in the Federal Classification was GS-15, and the top pay was $10,000. In that year the Secretary of War was authorized to fill 30 special positions with scientists at pay levels up to $15,000. In 1949, the Federal grade structure was expanded at the top to add three "supergrades": GS-16, GS-17, GS-18; 400 supergrade spaces were authorized, no more than 75 to be in grade GS-17, and no more than 25 in GS-18. By April 1972, the 400 spaces had increased to 2745 supergrade positions in the quotas controlled by Congress, an increase of almost 600 percent.[10]

In 1962, Congress authorized certain supergrade positions outside of quotas controlled by Congress, for Research and Development in the fields of physical or natural sciences, medicine, and engineering; by 1972 there were 1950 such positions.[11]

In 1972, the entire Government had 11,000 positions (7,000 in the Executive Branch of Government) in the eight levels from GS-16 ($29,680 in 1972) to Executive Level 1, including Members of the Cabinet ($60,000). Of the 11,000, 5 percent were in the Executive Schedule; 53 percent in the General Schedule (GS-16 to GS-18); 11 percent in science and engineering; and 31 percent in other salary systems (e.g., Foreign Service, Atomic Energy Commission, Tennessee Valley Authority, Panama Canal Zone, and physicians in the Veterans Administration).[12]

Approached from another angle, of these 11,000 high positions, 4,000 were in Executive Levels 1 through 5, Foreign Service, and other special salary structures, while 7,000 were under the administration of the Civil Service Commission, of which 5,800 were General Service Schedule (GS-16 to GS-18), and 1,200 were "public law" positions in the same salary range. Of these 7,000, 2574 were, in 1972, under quotas administered by the Civil Service Commission; 1950 were positions authorized by Congress without regard to quotas (non-quota positions for "hard scientists" and certain other professionals); 1,100 special agency positions covered by direct legislation; and 1,244 "Public Law-313-type" authorized positions, virtually all for scientists.[13]

---

[10] Ibid.

[11] Ibid.

[12] Ibid.

[13] Ibid.

It might be noted that the total 11,000 highest-level positions constituted less than 1/2 of 1 percent of the total Federal civilian work force; for example, in the Department of HEW, there were 600 personnel in the GS-16 to GS-18 (super) grades, out of the total HEW work force of 106,000 (.57 percent). Of course, these three grades cover only 3 out of 23 grade levels in the civilian grade structure.

It is of specific interest to this paper to present details of escalation over recent years in number and grades. Accordingly, the following table shows increases in civilian government positions in the categories cited above over the 1950's and 1960's:

Quota (govt.-wide): 1950-53, 400; 1956, 1200; 1962, 2350; 1971, 2754.

Non-quota: 1963, 300; 1965, 1200; 1968, 1750; 1971, 1950.

Special Agency: 1951, 50; 1959, 550; 1965, 950; 1971, 1100.

Public Law 313: 1947, 75; 1956, 200; 1959, 950; 1962, 1200; 1971, 1244.

Since 1968, jobs in the lowest 5 levels of the General Schedule have declined by 82,000 (15 percent), while jobs in the highest 5 levels have increased by 55,000 (14 percent).[14]

E. The Department of Defense.

Civilian positions at the highest levels of the Department of Defense reflect similar escalation. The following table[15] presents a comparison between 1954 and 1972:

	1954	1972	
Top-level DOD civilians	222	1526	
(Executive Levels)	(27)	(50)	
(General Schedule; i.e., GS-16 thru GS-18)	(195)	(1472)	NOTE: Half of this GS increase was devoted to research, development, and engineering.

[14] "Federal Pay Has Doubled in 10 Years," Washington Post, Feb. 25, 1974, p. 2.

[15] US Department of Defense. "Report on Officer Grade Limitations." May, 1973.

	1954 (cont.)	1972 (cont.)	
For comparison purposes, note general and flag officers in these years	1205	1324	NOTE: actual number on 30 June 1974 was 1249, programmed for reduction by 30 June 1975 to 1200.

Thus, in regard to escalation of top armed levels (of general and flag officers and their civilian equivalents and supervisors), it appears that over the 20 years from 1954 to 1974, including the entire Vietnam War period, general and flag positions increased by 44 positions, or less than 4 percent, while comparable civilian positions in the military establishment increased by 1304 positions, or 588 percent.

It may also be interesting to digress at this point to make a comparison. The figure was cited earlier that 11,000 high-level positions constitute less than 1/2 of 1 percent of the entire Federal work force, and that the Department of HEW contained 600 GS-16 to GS-18 spaces, or .57 percent of HEW's total work force of 106,000. If the same percentages were applied to the Defense Department's total work force of 2,250,000, 1/2 of 1 percent would produce 11,250 spaces, and .57 percent would produce 12,825 spaces; these figures should be compared with the actual number of positions at the top of the Defense Department, namely, 1526 civilians and 1279 general and flag officers, totaling 2805.

Various criticisms are leveled from time to time at the escalation of grades among the civilian components of the military establishment. For example, in August 1973 the Washington Post presented these statistics:

> The number of high-level GS-15 and GS-16 grade civil servants has almost doubled since 1961. . . . Even though many senior military and civilian officials recognize and worry about an expensive and inflated civilian work force, especially at the high-priced levels, those civilian rolls have largely escaped the budget cutting axe.[16]
>
> From a Vietnam war peak in 1968 of 1,287,000 civilian employees, the (Defense) department cut back by about 20 percent by June 1972 to 1,050,000. But since then, the level dropped

---

[16]Michael Gettler, "The Pentagon Bureaucracy, "Washington Post, August 27, 1973, pp. 1, 16.

> only to 1,013,000 by next June. Actually, the rate of reduction is greater because roughly 100,000 jobs--usually at lower levels--that had previously been performed by the military are now done by civilians. Nevertheless, the rate of civilian decline is well below the 37 percent cut in troop strngth, from a high of 3,547,000 in 1968 to current levels of about 2.25 million.
>
> [Senator] Mondale . . . charged that the civilian bureaucracy in the Pentagon was becoming top heavy even faster than the military.
>
> A GS-15 working for the Pentagon, or anywhere in government, makes at a minimum as much as most colonels and Navy captains. The more senior GS-15's and -16's make as much or more than many generals and admirals.

No evaluation is included here of the whys and wherefores of this situation: but mention should not be neglected of the situation that prevailed for many years—the considerable lag in government pay, both military and civilian.

> One of the most experienced manpower experts in government today . . . puts it this way: 'Through the 1950's and 60's, there were a lot of dry spells in federal pay raises. The top grades were underpaid and to take care of that a lot of jobs were upgraded,' he says, meaning a person was often given a raise by elevating him in his civil service rating rather than giving him more money in his same category.
>
> [Former Assistant Secretary of Defense] Kelley agrees that just the grade creep phenomenon is even more startling for the civil service than as a whole for the military.
>
> Another senior administration specialist stresses that inflation of grade structure is government-wide military and civilian . . .[17]

F. Government Salaries.

For government employees, the major reform instrument was the

---

17 Ibid.

Salary Reform Act of 1962, aimed at keeping federal pay comparable with that for similar jobs in industry, Tax Foundation, Inc., reported[18] in February 1974 several interesting developments:

-In the 15-year period from 1947 to 1962, the major Civil Service pay structure was increased 6 times: in the 11-year period from 1962 to 1973, pay was increased 13 times.

-Between 1962 and 1972, average federal pay increased 88 percent, compared to 66 percent average increase in the private sector and a 38 percent rise in the consumer price index. Including pay raises in 1973, average federal pay more than doubled since 1962.

-In 1968, more than half of all GS employees made less than $8,000 per year, and fewer than 2 percent made $20,000 or more; by 1973, only 23 percent were making less than $8,000 and almost 12 percent were making $20,000 or more.

-In addition to salary increases, benefits increased 147 percent since 1968.

-Since 1968, jobs in the lowest five grade of the General Schedule declined by 82,000 (15 percent), while jobs in the top five grade increased by 55,000 (14 percent).

G. Automation and Government Employment.

We anticipate here a later examination of automation and the work force, with an appraisal of automation on government employment. One of the most perceptive analyses of the changing interactions among automation and all levels of government and on changing grade structures and configurations, was provided in 1966 by James A. Donovan, of the United States Advisory Commission on International Educational and Cultural Affairs, warranting extensive quotation concerning:

> . . . the changing pattern of employment in the Federal government and hence, soon, in state, county, and local governments as well. Let us first cite briefly an article entitled, 'The Changing Federal Service,' by Robert E. Hampton, a member of the Civil Service Commission, published in the Civil Service Journal for April June, 1964.
>
> Commissioner Hampton, makes a number of interesting

---

[18]"Federal Pay Has Doubled in 10 Years," Washington Post, Feb. 25, 1974, p. 2.

observations. If one were to assume, he says, as once was the case, that the Federal service is "an army of clerks," one would further assume that out of 2,489,000 Federal employees, at least 1,000,000 must be general clerks at the bottom of the pay scale. He then points out the truth of the matter: the latest survey of the Federal government's white-collar employees (1961) shows that there were only about 28,000 general clerical employees in grade GS-1 through GS-4 (General Schedule). But, he goes on, there were more employees in physical science occupations and nearly four times as many in engineering as in general clerical positions. Part of the reason for this, of course, is that whereas, in 1947, there were approximately 14,000 employees whose work involved the operation of bookkeeping machines, calculating machines, and card-punch, sorting and tabulating machines, today this number has increased approximately to 22,000 and on top of that a new dimension-the computer-has been added, the Commissioner pointed out.

Since 1951, when the first computer, UNIVAC I, was installed in the Bureau of the Census, the Federal government has become the nation's prime user of automatic data processing (ADP) equipment. There are, indeed, 10,300 computer employees, and many of the 22,000 machine-operating employees mentioned above now work in direct support (in care and feeding) of the government's ADP and computer systems.

The use of these machines presumably has put a number of persons out of work. These are the sub-professional mathematical and statistical employees, of whom there are now 32% fewer than there were when the first computer was obtained. But the professional mathematicians have doubled in number since 1951, totalling 2,532, and professional statisticians have increased nearly 13%, totaling 2,569.

All such figures demonstrate, of course, the increasing dependence of the Federal government upon machines for information and knowledge, on the basis of which important decisions must be made in a number of new fields such as space technology, the anti-poverty program, and so on. Indeed, in science and engineering, the changes have been particularly dramatic. The number of

employees in the physical sciences has jumped 21% since 1957 to 34,4320; employees in physics are up 60%; in Chemistry, 29% in the biological sciences the increase is 28%--this group now totaling 36,917.

The rate of change of employees in engineering is even greater than in the pure sciences, with 116,854 persons working (1964) for the government in engineering. These represent an increase of 67% since 1957. Moreover, there are more technicians, although not many more, than typists in the government--78,326 of the former and 78,105 of the latter.

Obviously, more highly educated persons are needed to take care of the machine work. There are increasing numbers of white-collar, and fewer blue-collar workers. What is more, the government's grade structure generally has shifted upward or, as the phrase goes these days, it has "escalated." Many jobs are necessarily being filled at a higher level for the simple reason that the government is able to recruit and must recruit higher quality and more fully trained persons. Thus, the Congress has provided legislative authority to hire these skills at the GS-7 level instead of at GS-5, a raise in salary for these entering employees of approximately $2,000.

There are ever larger numbers of persons in the higher grades, GS-11 through 15, than there used to be, and a good part of the reason for this happy (for them) situation is that persons more educated are being paid more. The Federal government keeps up with the general society and economy and is increasing the proportion of its professional employees. These increased 40% between 1954 and 1962, while other occupations increased only 17% during the same period.

All of the above, of course, has many and numerous ramifications and implications for the kinds of persons the goverment is seeking to employ, to train after employment, and also to promote. But before we get into the educational aspects of government employment, let us look at another Civil Service Commission report.

Important to keep in mind from this report is the fact that employment by state, county, and local

government is increasing far faster than Federal employment. And the employees tend to be more and more professional. So even in the larger cities there will be centers of power--meaning centers of knowledge-- available to persons who have the machines at their disposal and know how to use them. This will tend, over the next generation, to create even further and deeper gaps between the understanding of the average citizen and his traditional view of what the government is to do for him and what he is to do for the government, whether state, local, or Federal.

The Civil Service Commission staff has some even more interesting figures and statistics having to do with the prospects for the Federal work-force through fiscal 1968 (i.e., June 30, 1968). It should be noted at the outset that these particular estimates are conservative and the changes in the Federal work-force herein outlined are those which are minimum changes likely to occur between the end of fiscal 1964 and fiscal 1968.

Before we discuss employment in the Federal government and the role of automation in the changing and evolving pattern of Federal employment, let us take a quick look at government employment altogether--that is, in Federal, state, county, and local government.

First of all, from fiscal 1953 to 1963, total employment in the economy of the United States went from an annual average of 50,232,000 jobs to 57,175,000. The increase was about 6,943,000 jobs. The increase in government employment during this period (Federal, state, local, and county) accounted for 2,890,000. Thus, it appears that, for the 10-year period, "government" has accounted for fully 41% of the total increase in employment in the U.S. Of this increase in government employment, the Federal share amounted to 1.9%, or 53,000 whereas the increase in state, county, and local governments accounted for 98.1%, a total of 2,837,000 persons.

For an administrator in the Federal Government, these figures having to do with the ratio of Federal to state and local employees have three important consequences. First of all, it will be important that the Federal service intensify its recruitment programs in order to hold its own against the increasing competition for better trained persons

who wish to work for government. Second, despite the fact that number of employees in the government sector of the economy is increasing, the work force per 1,000 persons in the population will be declining as regards its availability to Federal adminstrators. Thus, it will be absolutely essential that improvements in productivity be made if the present levels of public services are to be maintained and improved (and here we hit upon, for the first time in the recital of all these statistics, the notion that automation in government, great as it already is, has got to be increased). Third, state and local governments will tend to attract a growing share of promising administrative and technical talent, particularly as state and local organizations become competitive with similar Federal units in salary scales and employee benefits, professional career prospects, and opportunities for major public service. Yet, the supplies of such talent are expected to continue to be limited, especially in the age group between 35 to 45.

To make these figures even more significant, it should be pointed out that despite the fact that the rise in the Federal employee population has been slow as compared to the total rise of the whole population and as compared to the rise in local and state government employment, the pattern and structure of the Federal work-force is changing significantly. There are strong currents of evolutionary change, as the Civil Service Commission puts it, in the composition of the work-force. The main point here is that between the end of fiscal 1964 and the end of fiscal 1968, the white-collar worker will have increased in number from 1,275,000 to 1,398,000, for a total increase of 123,000. In the same period, blue-collar workers will decrease by 76,000 from a total in 1964 of 641,000 to a total in 1968 of 565,000 . . .

A very important fact is that, although employment in the white-collar sector of the Federal work-force is growing faster that employment in the Post Office Department, and although blue-collar employment is decreasing, Federal white-collar employment is growing with far less rapidity than is white-collar employment in the national work-force as a whole. This fact is not the result of below-average growth in Federal professional, administrative, or technical employment--that is, in the so called

high graded occupations. It is, rather, the result of the slow rate of growth of the lower-graded rate in clerical occupations which holds the total Federal while-collar growth rate below the national average.

The figures show, however, that between fiscal 1964 and 1968, the higher-graded occupations will increase by 112,000 and the lower-graded ones by 12,600. While many developments may occur in this four-year period to change significantly this expected 10 to 1 ratio in growth as between high-graded and lower-graded occupations, it is difficult for the layman to avoid the conclusion that somehow or other this is a reflection of increased uses of automation. In any case, the upshot of these figures is a change in relative employment 'mix' of higher and lower-graded occupations, which, in turn, is probably the predominant cause of the escalation of average grades in the Federal white-collar work-force that appears to raise so many questions in Congressional committees concerned with Federal employment. [Italics added.]

One last set of statistics to show the change in the 'mix' is to be found in the four years referred to above that will result in a 17.4% increase in major professional positions in government, whereas there will be only a 2.7% increase in clerical and kindred occupations. Thus, it is expected that mathematicians will be increased by 58.4%; educationists, by 30.4%; physical scientists, by 25.3%; and engineers, by 21.0%--all by the end of fiscal 1968. As for specialized clerical personnel, while those in personnel and supply occupations will go up 11.2% and 2.4%, respectively, clerks working on statistics will decrease by 9.5%; on accounting, by 12.4%; and correspondence clerks will decrease by 24.1%, leading to a total decrease in specialized clerks of 2.6%. However, buried in the statistics given in the Civil Service Commission report on the Federal work-force is this sentence: 'To what extent this extremely low clerical growth rate is due to the Federal government's Acknowledged leadership in the automation of routine workload, or to what extent it is attributable to other causes, is not known.'

To a government employee who has not been directly concerned with personnel matters as they occupy the Civil Service Commission or the personnel departments of the huge agencies, such a statement is striking enough. But what is perhaps more striking is that neither does the world of business know what effect

> automation has had on employment, nor, indeed, the effect on unemployment. Thomas J. Watson, chairman of the board and chief executive officer of International Business Machines Corporation of New York, was quoted, for example, in a New York Times article, March 14, 1965, as saying that no one knows the real effect of labor-saving machines in coal mines, auto factories, and oil refineries in regard to employment. In fact, during a national automation conference sponsored by the American Bankers Association, at which Watson spoke, the Times reported that there was one group of experts numbering the jobs destroyed by automation in the millions, while another argued that many industries that have automated the most also had expanded the most in employment. It thus became evident during the conference that no one knows which of these views is correct. The only fact all could agree on as the result of such differences of opinion was that far more study was essential.
>
> One gets the impression, nevertheless, that there is no change likely to take place in the next generation which will cause more consternation in government and among educators and businessmen than the fact that the country is increasingly going to be dependent on machines for vast amounts of data and reports.[19]

Based on this limited sampling of potential sources, it appears reasonable to observe that the entire area of government--Federal, state, and local--is susceptible to forces of escalation among civilian employees comparable to those evident within the military establishment.

---

[19]James A. Donovan, Jr., "Automation and Education: Reflections on the Involvement of Government." Dr. William W. Brickman and Stanley Lehrer, eds. Automation, Education, and Human Values. (New York: School & Society Books, 1966), pp. 220-226.

CHAPTER IV

BROAD SOCIAL AND CULTURAL TRENDS

A. Social and Cultural Change.

> Institutional Change--rapid, profound, and with unanticipated consequences--is another crucial characteristic of modern society, which is as instinctively and organically committed to innovation as previous societies were to stability.[1]

We live in dynamic times. Change runs broad and deep, reaching to almost every corner of society, and to the roots of our fundamental values. Moreover, change is swift, and change is complex, as various aspects of social and cultural life change at different paces, at different rates of acceleration and deceleration, and in different directions, while other aspects (a few) appear to be not changing at all.

Numerous factors and trends, in both static and dynamic conditions, appear to be interrelated in various ways with the problem of determining an appropriate grade structure for the American armed forces in the world of the post-Vietnam 1970's.

Certainly we are becoming steadily more affluent. While our population grew by 13 percent over the past decade, the number of families, for example, with incomes over $25,000 increased by 312 percent;[2] and similar escalation pervades the American standard of living within the majority of interest groups.

The relationship of three decades of inflation to wage escalation within organizations can hardly be regarded lightly. In July 1974 alone, the government's wholesale price index climbed as a (seasonally adjusted) rate of 3.7 percent (equivalent to a "staggering" annual rate of 44.7.) At the end of July 1974, the index stood at 161.7 percent of the 1967 average, 20.4 percent above the year earlier level.[3]

---

[1]Daniel Bell and Irving Kristol, Capitalism Today, (New York: New American Library, 1971), p. vii.

[2]Advertisement for The New Yorker Magazine, New York Times, May 21, 1974, p. 65.

[3]"Wholesale Prices Soared in July An Adjusted 3.7%." Wall Street Journal, August 9, 1974, p. 3.

Among numerous effects, escalatory pressures on wage-and-status structures have been inexorable and obvious. While we explore a number of other forces contributing to grade creep, and do not have recourse frequently to economic inflation as a handy explanation, we remain well aware of the important contribution made by inflation.

This chapter attempts to identify trends of change in general American society which appear interrelated with changes occurring in the modern military institution. Some changes are obviously and directly related. Others are less overt, or indirect, or even peripheral.

Most of the forces and trends selected for discussion in this chapter are more or less general within American society. Discussion of one very large area, the work force, is deferred until the next chapter, and another area, that of institutions and organizations, is deferred until the subsequent chapter; however, various overlapping aspects are also touched on in this chapter.

Two aspects of change most difficult to grasp are the size and the speed of factor-change, creating disturbing and mystifying differences in perspective between successive generations, and intensifying pervasive uncertainty about the course of fundamental aspects of society during one lifetime. Some procedures which evolved out of long experience seem to be ineffective when applied to contexts expanding sharply in scale and swiftly in time.

We are aware, for example, that world population is approaching 4 billion people, and that the likelihood is that it will reach 5 billion by 1990. But we have difficulty in realizing that it took the whole course of man's time on earth for world population to reach 1 billion people in 1860; that it reached 2 billion as recently as 1925; and that it reached 3 billion "just yesterday" in 1960.[4]

Roger Revell calculated a few years ago (in 1965, before US birth rates leveled off and declined) that between 1965 and 2000 the <u>increase</u> to be coped with in world population will exceed the entire world population existing in 1965.[5]

Alvin Toffler has conceived a dramatic vignette to bring home to us the intensified sense of time-compression appropriate to our day:

---

[4]Bell, "Measurement," p. 150.

[5]<u>Ibid</u>.

> It has been observed . . . that if the last 50,000 years of man's existence were divided into lifetimes of approximately sixty-two years each, there have been about 800 such lifetimes. Of these 800, fully 650 were spent in caves.
>
> Only during the last seventy lifetimes has it been possible to communicate effectively from one lifetime to another--as writing made it possible to do. Only during the last six lifetimes did masses of men ever see a printed word. Only during the last four has it been possible to measure time with any precision. Only in the last two has anyone anywhere used an electric motor. And the overwhelming majority of all the material goods we use in daily life today have been developed within the present, the 800th lifetime.[6]

Another aspect difficult (at least, for me) to grasp fully is the extension of life. Mentioned elsewhere, for example, is the fact that in 1789, with a population in the United States of 4 million people, the median age was 16.[7] In 1900, life expectancy in America was still only 47 years of age.[8] Most people died "in harness"; only small dimensions embraced such social problems as retirement, adult education, second careers, pensions, social security, housing for the elderly, shift in values, and geriatric medicine. To grow old was to be accounted wise and authoritative, for few grew old enough to out-remember everyone else.

Today, life expectancy in America is 71,[9] approximately the same in all advanced societies. The elderly today are hardly more unique than the young. This feature alone has generated powerful change in the national economy, in cultural values, in the division of labor, in family patterns, in education and work systems, in life styles, in expectations, and in career patterns and organizational structures.

Moreover, as the dependent elderly come to constitute an increasingly large segment of the population (to repeat--an

---

[6]Toffler, Future Shock. (New York: Random House, 1970), p. 15.

[7]Bell, "Measurement," p. 150.

[8]Ernest L. Boyer, "Higher Education for All, Through Old Age," New York Times, April 8, 1974, p. 35.

[9]Ibid.

unprecedented situation in any society), and as the years of youth preparation lengthen the period of early dependency, the burden of income-earning, and hence of "supporting" the entire population, will fall more and more heavily on an increasingly smaller proportion of the population. It seems reasonable to expect profound disturbance. A recent editorial presages such disturbance in relation to Social Security (no advocacy pro or con is suggested here in regard to the political implication in this editorial):

> . . . The burden of Social Security taxes upon the American wage-earner and his family is becoming intolerable. More than half of all families now pay more in Social Security taxes than in Federal income taxes . . . No pious platitudes about the system's 'fiscal integrity' or sermons about how well it has worked in the past (and it has worked well for many years) can change the fact that the demands on the system in 1975, 1985, and 1995, and beyond are going to be far greater and far different than they were when Social Security began nearly 40 years ago.[10]

Thus, even these two factors alone--numbers of people alive simultaneously and extension of life--have had, and continue to have, profound impacts on American society, not to mention many other powerful factors. Forces of such magnitude, among other effects, intensify the sense of uncertainty. Many time-tested provisions from the past, which worked reasonably well with relatively small numbers of people and with populations in which the median age of dying was less than 50, are not working well with enormously multiplied populations or societies in which the age distribution is so radically different from all past experience. Neither the United States nor any other society has lived with these major changes for so long as half a century (for some changes, no longer than a decade or two); in many respects, we are feeling our way, innovating, experimenting, employing expedients.

Thus, we have less than we had before of a sense of stability, of confidence that we have reached "permanent" solutions to many problems. We reluctantly become aware that almost every major "solution" we reach is only an interim solution that will probably have to be retooled and renegotiated 5 or 10 years from now, and that no major institutional feature (such as grade structure) will remain static over the next decade. Many of the trends cited in

---

10"Opinion: The Truth About Social Security," AARP News Bulletin, (American Association of Retired Persons), July-August 1974, p. 6.

this paper have already affected major social institutions, are affecting them now, or will affect them next week or next year. No institution should feel neglected because it has not yet been subjected to revision of its major features (such as its grade structure); the reason for neglect is probably simply cultural lag--it will soon be involved, like all others. Nor should any institution feel singled out by becoming involved in such problems for in time, no institution will escape.

Expanding this discussion over a more general spectrum of social and cultural change, we are cognizant of many dynamic strands in social aspects, from philosophy and ethics to the cost of living and big-time athletics.

In pursuing understanding of current and future value-systems of America, it is helpful to keep in mind the basic hierarchy of needs postulated by Abraham Maslow and complemented by Douglas MacGregor. Briefly, Maslow postulated a five-step hierarchy of man's needs or motivations--the most basic forming the base of a pyramid. The bottom is the survival level (life, food, water, heat). The next is the level of safety and security. The third level is that of social acceptance. The next rising level is that of success, prestige, esteem. The highest level is that of self-actualization, self-fulfillment.

MacGregor held that man is a wanting animal; as soon as his current immediate wants are satisfied, he turns out to be still unsatisfied overall. MacGregor asserted that satisfied wants are no longer motivators of behavior.[11]

Accepting these propositions as reasonable explains (in an over-simplified way) the continuum of value-pursuit fueling social change. When people lack bread, they work for bread and appreciate receiving it. But when bread-getting is no problem, they see no particular reason to be grateful for bread but demand automobiles. Hence, parents who lived through the Great Depression have difficulty in understanding affluent children who take economic security for granted, as though it were one of the fixed and natural elements of the earth.

Karl Mannheim is given credit for identifying in 1949 the two sources of deep crisis in Western civilization: erosion of legitimacy of social institutions, and loss of meaning of the overall purpose of our acts and lives, of what constitutes the good life.

---

[11]Douglas MacGregor, The Human Side of Enterprise, (New York: McGraw-Hill Book Company, Inc., 1960), p.36. See also Arnold Mitchell, "Human Needs and the Changing Goals of Life and Work," in Fred Best, ed., The Future of Work (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1973.)

Among prophecies related more intimately to this paper, Mannheim argued that, as the social base is broadened in industrial society, all elite professions will undergo democratization.[12]

It may serve the interests of this study to cite one of the most comprehensive structured set of projections within our knowledge, those of the economist Burnham Beckwith. In his book, The Next 500 Years, Dr. Beckwith lists 31 major social trends[13] which will affect social behavior, most of which are not only less than 500 years away but have been upon us for some time (note how many cite "growth," "increase," and "rise"):

1. The growth of population
2. The growth of knowledge
3. The relative growth of scientific research
4. The relative growth of education
5. Democratization of education
6. Decline of religion and superstition
7. Growth of social control over social trends
8. Rationalization of all social policies
9. Spread of birth control
10. Eugenic progress
11. Rise in real wage rates
12. Growth of leisure
13. Urbanization
14. Industrialization
15. Automation
16. Specialization

---

[12]Karl Mannheim, Man in Society in An Age of Reconstruction: Studies in Modern Social Structure, (London: Kegan Paul, 1940).

[13]Burnham Putnam Beckwith. The Next 500 Years: Scientific Predictions of Major Social Trends, (New York: Exposition Press, 1967), pp. 22-23.

17. Professionalization

18. Increase in the scale of production

19. Growth of monopoly

20. Centralization of control

21. Collectivization

22. Rise of meritocracy

23. Advance of feminism

24. Decline in income differences

25. Relative growth of free distribution

26. Reduction of all personal economic risks

27. Increase in paternalism

28. Rise of humanitarianism

29. Growth of intergroup relations

30. Cultural homogenization

31. Growth of personal freedom

In his own analysis of change, Zbigniew Brzezinski, Professor of Government at Columbia University, contends that the impact of science and technology on man and his society is becoming the major source of contemporary change, especially in the form of computers and communications.[14]

Alvin Toffler probes acutely for evidence of our disturbed sense of time and the consequences. He remarks that the value we place on the retainability of "things" declines--e.g., preference for Kleenex over handkerchiefs, paper wedding gowns, a trade-in policy even for "Barbie" dolls, and rental of almost everything. The same broad generalization can be broadened to apply to increased travel, longer travel, more moves per lifetime, and increased "rootlessness"; and for many people, more limited or

---

[14]Zbigniew Brzezinski, Between Two Ages: America's Role in the Technetronic Era (New York: The Viking Press, 1970), p. 9.

specialized relationships, shorter relationships, less involvement, higher job turnover, and similar phenomena.[15]

Harvard socialist Daniel Bell holds that the most disintegrating force in society is the New Sensibility. Nihilist movements of the past, he points out, were restrained at least by the requirements for form, even in art. Now, form itself is attacked as meaningless. Authority is attacked, on the grounds that no man is better than any other; learning, because "the past tells us nothing"; discipline and specialization, because they "restrict experience." Improvization is alleged to be more important than text, and expression more important than idea. Sincerity is praised above quality of judgment. These assumptions, says Bell, have permeated for the first time a large mass which is not itself creative but presumes that its experience is as relevant as all art.[16]

Donald Michael, a social psychologist with background in the physical sciences, comments on the effects of such change, and the debates about change, on the ordinary citizen. In these debates, says Dr. Michael, the inability of the nonexpert to contribute significantly to these discussions will be demonstrated. It will be extremely hard for the voter to make an intelligent decision about national issues. To make some sense from the confusion, the average citizen will join "causes" aimed at getting specified types of government action. In all likelihood, these causes will not be very influential, but will serve as a means of preserving the forms of popular democracy at the citizen or local level.

Those with inadequate education will feel even more left out than they feel today. They will regard experts with cynicism, as having "their own axes to grind." This group may find its own spokesmen to call attention to its grievances. Finally, many will remain indifferent; indifference will make it difficult for policy-makers to preserve democratic processes.[17]

It is interesting to include one foreigner's perception of what is happening in America. The French writer, Jean-Francois Revel, sees social ferment in America as indicating the future course of other advanced societies:

---

[15]Toffler, op. cit., pp. 47-49.

[16]Daniel Bell, "Quo Warranto?" The Public Interest, Spring 1970.

[17]Donald N. Michael, The Next Generation: The Prospects Ahead for the Youth of Today and Tomorrow (New York: Vintage Books, 1963, 1965), pp. 167-169.

> Today in America--the child of European imperialism--a new revolution is rising. It is the revolution of our time. It is the only revolution that involves radical, moral, and practical opposition to the spirit of nationalism. It is the only revolution that, to that opposition, joins culture, economic and technological power, and a total affirmation of liberty for all in place of archaic prohibitions. It, therefore, offers the only possible escape for mankind today: the acceptance of technological civilization as a means and not as an end, and--since we cannot be saved either by the destruction of the civilization or by its continuation--the development of the ability to reshape that civilization without annihilating it.
>
> It is essential for humanity that there should exist a society capable of making a revolution without sacrificing democracy. The United States seems to be in this position, and confers on this process the significance of a worldwide prototype.[18]

Toffler, as he does for so many aspects of current change, describes the effects of ferment and diversity in terms relevant to this paper:

> As specialization continues, as research extends into new fields and probes more deeply into old ones, as the economy continues to create new technologies and services, subcults will continue to multiply. Those social critics who inveigh against "mass society" in one breath and denounce "overspecialization" in the next are simply flapping their tongues. Specialization means a movement away from sameness. Despite much loose talk about the need for "generalists," there is little evidence that the technology of tomorrow can be run without armies of highly trained specialists. We are demanding more "multi-specialists" (men who know one field deeply, but who can cross over into another as well) rather than rigid "monospecialists." But we shall continue to need and breed ever more refined work

---

[18]Jean-Francois Revel. "Without Marx or Jesus: The New American Revolution Has Begun." Saturday Review, July 24, 1971, pp. 14-32.

> specialties as the technical base of society increases in complexity. For this reason alone, we must expect the variety and number of subcults in the society to increase.[19]

In turn, economist Kenneth Boulding comments on the impact of diversity in overall American social structure:

> American society up to now has stressed the idea of a "melting pot" and has sought to create through public education a uniform culture. With increased affluence and increased political skill, this ideal can now be called into question. Can we now invent a "mosiac" society, composed of many small subcultures, each of which can at the same time remain at peace with its neighbors and not threaten to pull the society apart?[20]

B. Changing American Values.

In a large sense, it is frustrating to seek to express American values other than diversity, pluralism, nonconformity, and elusiveness of categorization. Other than these, there is no selection of values, or any ordering of them in priority, to which all Americans will subscribe. In far lesser degree, a number of Americans might join in consensus concerning a very limited, selected, and ordered cluster of values; but it would have to be a very small cluster to achieve consensus.[21]

Professors Lipset and Ladd observe a shift which affects practically all citizens during a modern lifetime:

> . . . as they grow older, alumni become more moderate . . . as against an earlier position closer to the extreme . . . While each college

---

[19]Toffler, op. cit., p. 254.

[20]Kenneth E. Boulding, "Expecting the Unexpected: The Uncertain Future of Knowledge and Technology." In Edgar L. Morphet and Charles O. Ryan, eds., Prospective Changes in Society by 1980, Vol. I of Designing Education for the Future. (New York: Citation Press, 1967), p. 212.

[21]"Potential Impacts of Cultural Change on the Navy in the 1970's," op. cit., Vol. 5, p. 3, (AD 749913).

> generation seems to go through the same process, any given later generation will have started at a more liberal or left position than the preceding one . . . the historical slope of political attitudes among American college generations . . . has been toward a more liberal position over time . . .[22]

Numerous observers contend that beliefs in long-accepted precepts, and respect for them, are declining, along with acceptance of authority and confidence in social institutions. British political scientist Alastair Buchan cites "diminishing respect for political leadership, divorce between social and political loyalties, adjustment from rural to urban values, and the increasing dominance of the mass media."[23]

Some wax extreme and apochryphal in ascribing a trend affecting part of society to the entire society, such as in this partially doubtful assertion: "The old paradigm, according to which man is engaged in a continuous, selfish struggle for his advancement, more in the material than in the intellectual or moral sense, is dead."[24]

In a study discussing status, stratification, status escalation, rising levels of competence, and rising expectations, it seems appropriate to cite a number of analysts of what is happening among American values; for values are fundamental determinants of political, economic, and social forces which are manifested in motivations and attitudes, and eventually in decisions, statutes, and policies. The primary fuels of status escalation in any society include that society's values.

The classic descriptions of the "American character" by De Tocqueville, Bryce, and others brought out two sharply contrasting sides: (1) anxious conformism, emphasis on socially-defined success; a tendency to "escape into the crowd" rather than to look within, and emphasis on work and leisure, on quantity over quality, and on varied activity rather than deep experience, (2) genuine humanitarianism, capacity for self-awareness, aesthetic sensitivity,

---

[22]Seymour M. Lipset and Everett Caroll Ladd, Jr., "College Generations from the 1930's to the 1960's." The Public Interest Fall 1971, pp. 99-113

[23]"Collapse of Leadership," Editorial, New York Times, May 11, 1974.

[24]From a brochure advertising K. F. Riegel, ed., Intelligence: Alternative Views of a Paradigm (New York and Basel, Switzerland: S. Karger, 1974).

readiness to identify with the underdog. Certain observers have, of course, constructed intermediate prototypes; and all prototypes contain a number of subvariants. V. L. Parrington said that a major dynamic in America's intellectual and institutional history is the conflict between authoritarian and equalitarian concepts of man and society.[25]

Warner discerns another basic conflict in the American ethos. He says the American Dream contains two propositions: all of us are equal; and each of us has the right to a chance of reaching the top. These are mutually contradictory; for if all men are equal, there can be no top level to aim for, no bottom one to get away from; there can be no superior or inferior positions, but only one common level into which all Americans would be born and in which all of them would spend their lives. We all know such perfect equality of position and opportunity does not exist; all Americans are not born into families of equal position. Still, we recognize that, though it is called a Dream and though some of it is false, by virtue of our firm belief in it, we have made some of it true.[26]

Dr. Robin Williams expresses his belief that the United States has "several functional elites, performing different major sets of societal tasks." A highly differentiated society, it combines functional inequality with relatively rapid and massive movement toward ". . . a good measure of economic equality . . . [in addition] . . . to the civil and political equality won during the past three centuries."[27]

Kurt Lewin diagnosed the American personality as a small core of private self, surrounded by a larger area of public view, not so easily hurt. He contrasted this with, for example, the German personality, in which the public area is much smaller and the private area much larger. He said the American personality needs include greater needs for adjustment, not so much to feed personal integrity and super-ego as to get along socially without friction.[28]

---

[25]D. J. Levinson, "Authoritarian Personality and Foreign Policy," Journal of Conflict Resolution, March 1957, pp. 37-47.

[26]W. Lloyd Warner, Marchia Meeker, and Kenneth Eells. Social Class in America (New York: Harper and Row, Publishers, 1949), p. 4.

[27]Robin M. Williams, Jr., "Changing Value Orientations and Beliefs on the American Scene," Illinois in Transition. Report of the State of Society Conference for Church Leaders, Dec. 7-9, 1965. (Monticello, Illinois: University of Illinois, 1965).

[28]Kurt Lewin, Resolving Social Conflicts (New York: Harper, 1948).

This estimate is largely substantiated by David Riesman, who observes that the American need to get along with others is in a superficially harmonious manner but without deep personal emotional commitments; and psychologist Karen Horney and political scientist Robert Lane appear to agree.[29]

Several analysts discern shifts in American values:

Anthropologist Clyde Kluckholn suggests that the United States has experienced a set of changes in values resulting in heightened emphasis on group rather than individual goals, on security rather than future success, on adjustment rather than competitive achievement, and on expressive rather than instrumental values.

More specifically, he suggests eight appraisals:

1. Strictly personal values have given way, in favor of more publicly standardized "group values," whether those of a community, an organization, or a profession.

2. More emphasis is being placed on psychological desiderata relating to mental health, the education and training of children, and self-cultivation (as an adaptation of "normality" in group living).

3. Respectable and stable security has risen in the scale of values at the expense of high aspirations and effort directed at long-time future success.

4. Aesthetic values have received increasing favor.

5. Participation in organized religion has risen in approval, but the emphasis seems to be heavily on group affiliation and stability rather than on intensified personal religious commitment.

6. Heterogeneity in certain respects is becoming a principle of organizing the value system; variety is valued for itself.

7. Ideals for women have changed, as have sexual codes.

8. There is decreased concern for abstract standards; greater emphasis is placed on explicit values.[30]

---

[29]David Riesman, et al, The Lonely Crowd (New Haven: Yale University Press, 1950): Karen Horney, The Neurotic Personality of Our Time (New York: W. W. Norton & Co., Inc., 1945): Robert E. Lane, Political Life (New York: Free Press Macmillan, 1959).

[30]Williams, Illinois.

Psychologist Philip Slater identifies two cultures in America: the old scarcity-oriented technological culture, which is predominant; and an amorphous counter-culture, which challenges it. This tension has reversed some priorities of the old culture which, Slater says, gave preference to:

property over personal rights

technological requirements over human needs

competition over cooperation

violence over sexuality

concentration over distribution

producer over consumer

means over ends

secrecy over openness

social forms over personal expression

striving over gratification

oedipal love over communal love.[31]

The implication here seems to be that the left-hand element of these equations is old and bad, and that the right-hand member is new and good. These sweeping implications seem partially untenable. Each equation would be more useful if evaluated under the circumstances to which it is expected to apply. Nevertheless, a number of these propositions indicate potential general value shifts which may become important in analyzing and coping with future value orientations of young people.

Little and Gordon, of the Institute for the Future, provide still another account of value shifts as they see them, in holding that the following statements are becoming more representative of the majority of Americans:

-Sensing that information is sometimes manipulated to obtain certain behavior--for example, by government to obtain support of its programs or by business to obtain customers for its products.

---

[31]Philip Slater, "Cultures in Collision," Psychology Today, July 1970, pp. 61-69.

-Belief that profits no longer can justify business actions which impinge on the public interest.

-Belief that the Protestant ethic may no longer hold, that work in the public interest may be better than work for economic gain.

-Attributing to the seller the responsibility for his product, both in its intended use and in its side effects.

-Acceptance of the fact that progress has costs, monentary as well as environmental and human, and that progress for its own sake or for economic gain may no longer be totally acceptable.

-Growth of a new humanism, an exploration of new states of consciousness and awareness of being, which promotes community, touching, and sensitivity and encounter groups.

-Dissatisfaction with the inequities in society, particularly those which appear to be structural attributes to the system. These inequities include, for example, the poverty gap and differences in health delivery and educational opportunity.

-A view of the United States, at times, as a potentially violent nation, aiming nuclear weapons and being target in turn, very advanced economically but impoverished and blind in important social domains.[32]

In 1966, an extensive Delphi survey was conducted by Dr. Nicholas Rescher of the University of Pittsburgh, and Dr. Olaf Helmer, of RAND, to appraise a number of widely expressed propositions about changing American values--what the authors called "folklore"--in order to elicit appraisals of whether the cited trend was, in the consensus among the selected professional respondents, true or false. The propositions appear below, each followed in parenthesis by the resulting consensus:

-That we are losing our commitment to values in general. Nothing is dear to us throughout our lives; we choose only what momentarily fills the gap. (Probably false)

-That we have lost our attachment to the serious values that reflect genuine human needs (health, friendships, freedom, etc.);

---

[32]Dennis L. Little and Theodore J. Gordon, "Some Trends Likely to Affect American Society in the Next Several Decades." Working Paper WP-16. Middletown, Conn.: Institute for the Future, April 1971.

increasingly we value what is essentially frivolous (escape, diversion, amusement). (Probably false)

-That our values are becoming more and more man-directed (health, success, group-acceptance) and less and less God-directed (living God-fearing lives, doing God's work, accepting what God ordains). (True)

-That our traditional commitments to moral values are going by the board. Honesty, probity, etc., are becoming obsolete. Moral indignation is out of fashion. We are less and less prone to bring to bear the ideas of right and wrong, and are increasingly diffident about our ability to make such discriminations. (No statistically significant agreement).

-That we are becoming more and more materialistic. The spiritual qualities of man are no longer precious to us. (No statistically significant agreement).

-That American values are going to pot. The traditional American value foci (country, honor, independence, probity, etc.) are becoming things of indifference to us. They are no longer upheld or worried about. (Probably false)

-That our taste and our aesthetic values in general are being debased (by mass-culture, television, pulp magazines, etc.) (Probably false)

-That our values are becoming more and more social values, with less and less emphasis upon individual values (e.g., social injustices worry us more than individual ones). (Probably true)[33]

Dr. Nicholas Rescher highlights a few impacts of exploding population. There is increasing crowding in the land, and in its population centers in particular. There is the especially unstable side effect of "Category crowding." We have to deal not just with more people, but with more senior citizens, more college students, etc. The sheer volume of people has a seriously erosive effect on a whole list of American values ranging from privacy to the cherished right to be treated as a person.[34]

---

[33]Kurt Baier and Nicholas Rescher, eds., Values and the Future: The Impact of Technological Change on American Values (New York: The Free Press, 1969), pp. 135-147.

[34]Ibid., p. 87.

Herman Kahn and Anthony Wiener express misgivings about certain shifting values. As a result of affluence and other developments, they say, there is a decline in the values of work and national service which may have some destructive effect. Thus there may be a great increase in selfishness, a great decline of interest in government and society as a whole, a rise in the more childish forms of individualism, and the more antisocial forms of concern for self and perhaps immediate family.[35]

Baier and Rescher foresee the possibility of a different outcome. The prospect of self-advancement has been an important American value in the past; we shall reach the end of an era in this regard. Social adjustment and the acceptance of a value-pattern based on socio-economic realities may well prevail over the older vision of a heroic drive towards outstanding achievement. The group-adjustment point of view may well be expected to predominate.[36]

Dr. Richard Farson, among many important special issues that could be (and have been) raised, singles out one impact of change that appears likely to generate further ferment in American society:

> As science and technology give us more and more control over heredity, and over the thoughts and behavior of others, we are becoming alarmed about wiretapping, psychological testing, computerized dossiers, psychologically-coerced confessions, and the like. We must deal with our new power by reducing deception and secrecy. In the long run people will not, without protest, permit unlimited information about themselves to be collected and stored in data banks or in thick personnel folders to which they have no access. Furthermore, people will not submit to psychological tests of any kind unless they are sure that such tests are designed to benefit them. People will resist giving personal information to anyone; they will refuse to subject themselves to unclear procedures as they become more aware of the controls that can be exercised over them. There will soon be sweeping legislation that will radically change our practices of record-keeping, testing, experimentation, investigation, and communication--and these changes will not be in the direction of Orwellian cradle-to-the-grave surveillance, as some writers have suggested,

---

[35]Herman Kahn and Anthony Wiener, The Year 2000 (New York: Macmillan, 1967).

[36]Baier and Rescher, op. cit., pp. 86-87.

> but rather in the opposite direction. Moreover, as the communication network becomes larger and more finely-meshed, it will be harder, not easier, to conceal or distort the "facts behind the news," and thus manipulate or control opinion.[37]

Finally, it appears timely, for the benefit of all institutions interested in shifts among American values, to cite the apparent rising significance of ethics. For example, in October 1971, a group of 21 eminent scholars and professionals, participants in a symposium sponsored by the Joseph P. Kennedy Foundation, signed a statement urging that wisdom and ethics--and not mere knowledge--become determining factors in conducting technological advances affecting human life. One speaker said that ethical dimensions of technology were being largely ignored by both scientific and medical institutions.[38] At the same conference, it was startling to hear a comment by Herman Kahn, an eminent and perceptive futurist, involving ethics, the explosion of knowledge, and whether or not the momentum of technology should be subject to any restraints external to itself:

> Now this is very hard for me to say . . . but the knowledge and technology that are now becoming available are very hard for society to absorb, so we may well need an "index of Forbidden Knowledge" . . . A good deal of genetic engineering looks to me as though one might be better off without it . . .[39]

One of the most significant surveys of the values of current American youth was recently reported by Daniel Yankelovich.[40] The

---

[37]Richard E. Farson. "Bill of Rights for 1984." In Mankind 2000 (London: Allen and Unwin, Ltd., 1969), p. 190.

[38]"Ethics as a Factor in Scientific Gains Urged by Scholars," New York Times, October 23, 1971.

[39]Ibid.

[40]This substantial survey, sponsored by five foundations, is Mr. Yankelovich's fifth survey on the values of American youth, and will be published by McGraw-Hill in the fall of 1974. Some 3,522 persons between 16 and 25 were interviewed for 1-2 hours; 1,006 were college students, the rest workers. (Richard Severo, "Survey Finds Young US Workers Increasingly Dissatisfied and Frustrated," New York Times, May 22, 1974, pp. 37, 70).

survey presents evidence of substantial continuity in the trend of college youth and working youth; it is noteworthy that in a number of respects, working youth's values have reached the approximate stage that college youth reached five years ago.

Proposition	College 1969	College 1974	Noncollege 1969	Noncollege 1974
Living a clean moral life is a very important value	45%	34%	77%	57%
Patriotism is a very important value	35%	19%	60%	40%
Religion is a very important value	38%	28%	64%	42%
Believe that hard work always pays off	56%	44%	79%	56%
Would welcome less emphasis on money	73%	80%	54%	74%
Casual premarital sexual relations are morally wrong	34%	22%	57%	34%
Would welcome more acceptance of sexual freedom	43%	61%	22%	47%

In addition, 55 percent of Black youths consider this society "sick," and 76 percent see it as undemocratic.[41]

This substantial trend in value change will not be halted by exhortation, but must be coped with by all major institutions concerned with socialization and institutionalization of oncoming youth--for example, in organizational structures, procedures, pay scales, and relationships. To some extent, the survey may indicate comparable value trends among older sectors of the population.

The nature, content, direction, and momentum among American values are matters of concern to all major American institutions; for whatever their specific functions and circumstances, each institution will have to so adapt its organization, structure, and procedures as to achieve compatability with whatever hierarchy of values prevails among Americans during any period of time.

C. Knowledge and Information.

One of the most significant developments affecting modern

---

[41]Fred M. Hechinger, Jr., "Youth's New Values," New York Times, May 28, 1974, p. 37.

society and stratification is the explosion of knowledge itself, and in the requirements to employ proliferating knowledge.

We cite a few selected measures of the explosion in the knowledge and information becoming available to us:

> As late as 1920 "it was still widely believed that the Milky Way really comprehended our entire universe. Only within the last 10 years have we become fully aware that this galaxy of ours is in fact but one among millions or perhaps billions of such galaxies, lacing the heavens, stretching to distances of which the world of 1920 or even 1950 could have had little conception . . ."[42]

Daniel Bell, among others, predicts that the post-industrial society will be a knowledge society, and that the most important institution in future society will be the knowledge institution.[43]

Over the 500 years from Gutenberg in 1450 to 1950, some 30 million printed books were published in the world; an equal number were published over the 25 years up to about 1968.[44]

Fremont Ryder, librarian at Wesleyan University, was in 1944 one of the earliest to raise the warning flag about the explosion of knowledge. Ryder calculated that, on the average, American research libraries were doubling every 16 years. He speculated that by 2040, the Yale Library, for example, increasing at the most conservative extant rate, will contain 200 million volumes, with a card catalog alone employing 6,000 persons and covering 8 acres of floor space.[45]

---

[42]Caryl Haskins, President of the Carnegie Institution of Washington, Presidential Report of 1965-1966 (quoted by Daniel Bell, "Measurement," p. 148.

[43]See Daniel Bell's highly informative chapter "The Measurement of Knowledge and Technology," op. cit.; Robert K. Merton, Social Policy and Social Structure (Glencoe, Ill.: The Free Press, 1957); and Fritz Machlup, The Production and Distribution of Knowledge in the United States, (Princeton: Princeton University Press, 1962). I am particularly indebted to Bell's data here.

[44]Peter Drucker, "Evolution of the Knowledge Worker," in Best, op. cit., p. 58.

[45]Fremont Ryder, The Scholar and the Future of the Research Library (New York: Hadham Press, 1944), pp. 11-12.

Between 1745 and 1785, the first two editions of the Encyclopaedia Britannica were put together by one or two persons attempting to include all human knowledge within their cognizance. In 1788, for the Third Edition, the editors were forced to seek the assistance of a few specialists. The 1967 edition, on the other hand, used 10,000 recognized experts.

The first scholarly journal to survive was the Philosophical Transactions of the Royal Society of London published in 1665. By 1800, there were 100 scientific journals; by 1850, 1,000; by 1900, 10,000. In 1830, a "critical mass" of 300 important journals was reached, and so the first abstract journal appeared. By 1950, there were 300 abstract journals in circulation.[46] (How does one abstract abstract journals?)

The same exponential growth has occurred in the production of scholarly papers. Entries in Physics Abstracts have doubled about every 15 years, and reached 180,000 papers by the early 1960's.[47]

A cooperative project was begun by the National Science Foundation and the American professional societies after World War II, called the National Register of Scientific and Technical Personnel. The first Register listed 54 scientific specializations; 20 years later, the Register listed over 900 distinct specializations.[48]

Fritz Machlup estimated that in 1958 about $136.5 billion (29% of the GNP) was spent by the United States on all forms of accumulating, organizing, and disseminating knowledge.[49]

The category of Professional and Technical Persons expands faster than the population and the work force. This trend, illustrated in the following table, particularly affects the upper levels of any organization grade structure (and hence the whole grade structure) in all major social institutions employing professionals, scientists, and specialists:

---

[46]Derek Price, Science Since Babylon (New Haven: Yale University Press, 1961), p. 96 (cited by Bell, "Measurement," pp. 164-165.

[47]Bell, "Measurement," p. 166.

[48]Ibid., p. 173.

[49]Machlup, op. cit., pp. 360-361.

Numbers of Professional and Technical Persons

1947: 3.8 million
1964: 8.5 million
1975 (projected): 13.2 million (14.9% out of a projected American work force of 88.7 million). If managers, officials, and proprietors are added, this grouping will contain 25.3% of the working population--in essence, the educated class of the United States.[50]

In 1930, the United States had about 46,000 scientists; in 1964, about 475,000. Engineering, the second largest occupation (and largest for men), increased from 535,000 in 1950 to 975,000 in 1965; engineers are expected to number 1.5 million by 1975. Between 1930 and 1965, while the work force increased by 50 percent, engineers increased by 370 percent and scientists by 930 percent.[51] It might be noted, in passing, that among scientists and engineers employed by the Federal Government, the largest number are employed by the Department of Defense.[52] Such changes constitute one powerful thrust affecting the attempts of government agencies to devise appropriate grade structures that will be stable for more than a few years.

Bell foresees the Scientific City of the future, in which three classes are foreshadowed:

A creative elite of scientists and top professional administrators, a middle class of engineers and the professoriate, and a proletariat of technicians, junior faculty, and teaching assistants.

> . . . there is already an extraordinary differentiation within the knowledge society, and the divisions are not always most fruitfully explored along traditional class lines of hierarchy and dominance, important as these may be. There are

---

[50]Bell, "Measurement," pp. 200-201.

[51]Ibid., pp. 201-202.

[52]Ibid., p. 212. In addition to scientists, academics, and other specialists who are permanently employed by the government, and exclusive of those others who serve the government intermittently as consultants, some 4,628 college and university faculty members, as of December 1972, were serving on federal advisory committees; from the top 50 schools alone, 3,007 such representatives served. Murray L. Weidenbaum, "Academics on Government Committees: Corrections," Change, Vol. 6, No. 5 (June 1974), p. 4.

> other sociological differences as well. In the social structure of the knowledge society, there is, for example, the deep and growing split between the technical intelligentsia who are committed to functional rationality and technocratic modes of operation, and the literary intellectuals who have become increasingly apocalyptic, hedonistic, nihilistic, and the like. There are divisions between professional administrators and technical specialists, which sometimes result in dual structures of authority, for example, in hospitals and research laboratories. In the universities, there are divisions. Any further exploration of the knowledge class would have to explore in detail these varying patterns of stratification and differentiation.[53]

One simplified analysis of the routes of access to power in society has three alternative bases, all present in varying proportions:

Base of Power	Mode of Access to Power
property	inheritance entrepreneurial ability condotierri methods
skill	education
political office	mobilization co-optation

Emerging as the chief determinant of the stratification of Western society is education; and as the society approaches becoming a "meritocracy," the skill-education channel emerges as the most important route to power and influence for the vast majority of persons.[54]

D. Education

Education and advancing technology are probably the two most powerful agents of social and cultural change. It has been one of

---

[53]Bell, "Measurement," p. 199.

[54]Ibid., p. 160.

the prime features of the American Dream to press for higher education, primarily (perhaps) as an indispensable means of achieving upward political, economic, and social mobility.

America early adopted as its educational objective nothing less than mass education, whereas practically every other society has been content until recently with education of the small minority of elites sufficient to administer the affairs of the polity. America did not achieve its objective soon, or easily, or cheaply; but it has never stopped trying to attain it, and its efforts continue with unabated vigor today. Within the recent decades, the dimensions of educational endeavors have burgeoned incredibly, though the roots of the effort extend back a long way and illustrate the interrelatedness of major social movements along many lines concurrently.

Many trends in education affect the competence, skills, socioeconomic status, and expectations of oncoming generations, and directly affect the allocation of work, statuses, rewards, and productivity involved in every major institution.

In addition to cultural forces emphasizing motivation toward education, several long-term social changes had to take place in order to make widespread education possible. One was public reaction against child labor; the final stages of this objective were achieved by New Deal labor legislation, so that today almost 99 percent of school-age children attend school.[55] A parallel development was the growth of compulsory education statutes; while the earliest such statute was enacted by Massachusetts in 1852, fourteen states did not enact them until the 20th century. As of 1955, compulsory education laws were in force in every state of the Union--in one state (Maine) covering the years through the age of fifteen, most through sixteen, and a few through seventeen and eighteen.[56]

A third contributing development, linked to the other two, was the lengthening of the school year. In 1876, when America was still a rural nation, the average number of days in the school year was 80; in 1916, 121; in 1936, 146; in 1960, 160.[57]

---

[55]Ben J. Wattenberg and Richard M. Scammon. This USA (Garden City, NY: Doubleday and Company, Inc.), p. 209.

[56]Ibid.

[57]Ibid.

How many years of education do Americans receive today? In 1910, 17 percent of American youth aged 25-29 had graduated from high school; in 1920, 21 percent; in 1930, 27 percent; in 1940, 38 percent; in 1950, 53 percent, in 1960, 61 percent; in 1964, 69 percent.[58]

The relevant statistics can be presented in a number of useful ways; we have recourse here to a few selected measures which substantiate the relentless spread of education, particularly among selected age groups. For example, these figures[59] indicate the percentages who have graduated from high school:

	17- and 18-year-olds	20-24 years	20 years and older
1940	--	44%	27%
1946	47.3%	--	--
1972	76.2%	83%	62%

The following figures[60] indicate radical expansion in the percentage of college-educated:

	25-29 years	25 years and over
1940	6%	4.6%
1972	19%	12%

In 1960, there were 7 1/2 million living college graduates in the United States; in 1970, about 10 million; and in 1980, it is projected that there will be about 14 million.[61]

The median years of school completed, among the entire American population over 25, are as follows: 1940, 8.6 years, 1950, 9.3 years; 1960, 10.5 years; 1970 (projection), 12.0 years; 1980 (projection), 12.3 years.[62]

---

[58] Ibid., p. 212.

[59] Social Indicators 1973, Executive Office of the President: Office of Management and Budget (Washington: USGPO, 1973), p. 77.

[60] Ibid., p. 90.

[61] Wattenberg and Scammon, op. cit., p. 233.

[62] Ibid., p. 231.

Enrollment of undergraduates in institutions of higher learning, and the corresponding percentage of 18-24 year-olds in 1940 and certain years since, were as follows:[63]

	Number enrolled	Percent of all 18-24-year-olds
1940	1,209,000	8.3
1950	1,583,000	10.0
1960	2,069,000	13.3
1967	4,655,000	23.3
1970	5,266,000	23.3
1971	5,676,000	24.0

Enrollment in all American institutions of higher learning (including graduate students, 2-year and 4-year degree seekers, and non-degree seekers) numbered in 1957, 3.224 million; in 1960, 3.789 million; and in 1971, 8.949 million.[64]

Incidentally, median teachers' salaries in public school systems nationwide almost doubled within eleven years, moving from $5,449 in 1960-1961, to $10,146 in 1971-1972.[65]

Another indicator of increasing complexity in education and resulting pressures toward specialization among teachers (which tends to reduce the number of pupils per teacher), is reflected in the declining pupil-teacher ratio in public school systems.

---

[63] Social Indicators 1973, op. cit., p. 105.

[64] Ibid., p. 106.

[65] Education for a Nation (Washington: Congressional Quarterly, Inc., 1972), p. 7.

1900: 35.6 pupils per teacher[66]

1954: 27.7[66]

1960: 25.7[66]

Variant figures on the pupil-teacher ratio are given by other sources, but the trend is the same:

	Total	Elementary Schools	Secondary Schools
1955[67]	--	30.3	20.8
1958[68]	26.1	28.7	21.7
1962[67]	--	28.5	21.7
1968[68]	23.1	25.4	20.3
1972[67]	--	24.4	18.9
1980 (proj.)[67]	--	22.0	17.6

Similar indications might be found in comparative figures elicited by the National Education Association from surveys of junior college faculties as to the mean of class hours per faculty week and the mean of total number of students per faculty member:

	1964	1970
Mean class hours per week	17.4[69]	16[70]
Mean number of students	138.1[69]	105[70]

---

[66]Wattenberg and Scammon, op. cit., p. 234.

[67]Data from 1973 edition of Projection and Educational Statistics to 1982-1983, National Center for Educational Statistics, Office of Education, Department of HEW (1973 edition not yet published as of May 1974; data provided through courtesy of Mr. L. Grant, of that office).

[68]Education for a Nation, op. cit., p. 49.

[69]"Faculty Load Policies and Practices in Public Junior and Community Colleges," Memo, HE-5, Washington: National Education Association, Research Division, March 1972, p. 3.

[70]"Mean of Selected Characteristics for Sample of Faculty Members with Full-Time Teaching Assignments in Junior Colleges," National Research Bulletin, February 1966, p. 10.

Admittedly, this trend is not without its ambiguities. The emergence of teaching machines, teachers' aides, and other developments tends to increase the number of pupils within the practical purview of each teacher, and tends in turn to decrease the number of teacher-supervisors required to perform their function per given number of students. This would tend to expand the basis for each teacher's expectations of higher pay and perhaps higher status as well. On the other hand, teaching machines, for example, require higher capital investment per pupil. Teachers' aides, though comparatively low-paid (or unpaid volunteers), do require some budget expediture in addition to direct salaries for teachers. Moreover, the increasing diversity of education programs and facilities, (e.g., for more individualized instruction, for the physically handicapped, for those with learning disabilities, for the retarded, emotionally disturbed, and autistic) tend to swell, not reduce, the number of teachers per given number of students in most systems; and this trend continues.

The following figures indicate the substantial rise in numbers of persons required to teach and administer the burgeoning American campus population since 1959. They show the total full-time and part-time professional staff positions in all institutions of higher learning:[71]

Year	Instructional Staff	Administration and Services (Library, etc).	Organized Research	Total
1959-60	337,887	43,965	36,836	418,788
1969-70	700,000	92,000	80,000	872,000
1979-80 (Projection)	986,000	124,000	112,000	1,222,000

A later, somewhat revised, study cites the employment of 312,000 higher education "instructors" in the fall of 1962, and of 600,000 in the fall of 1972 (increase of 92 percent).[72]

Projections of school population to 1982-83 anticipate some decline in the future--of 11 percent in the 5- to 13-age group, and 14 percent in the 14- to 17-age group, but an increase of

---

[71]US Department of Health, Education, and Welfare, Office of Education. Projections of Educational Statistics to 1979-1980, 1970 Edition. (Washington: USGPO, 1971), p. 68.

[72]"Financial Trends in Education." Report by the US Office of Education. Cited in "Educational Funds Up $56 Billion in Decade, US Agency Reports," New York Times, May 17, 1974, p. 29.

6 percent in the 18- to 21-age group. Elementary and secondary teachers should decline by 3 percent. Nevertheless, moneys devoted to American education increased from $32.4 billion in the 1962-63 school year to $89 billion in 1972-73, and are projected to reach $114.5 billion in 1982-83. Of the 1982 projected total, $70.4 billion will be spent for elementary and secondary schools ($64.1 billion for public schools, $6.3 billion by private schools), and $44 billion in colleges and universities ($29.3 public; $14.7 private). Elementary-secondary school expenditure was $439 per pupil in 1962, and $1,026 in 1972-73, and is projected to reach $1,446 in 1982-83.[73]

The achievement of graduate degrees has increased substantially over 30 years. In 1940, 26,761 master's degrees were awarded, and 3,290 doctorates.[74] In 1958-59, 72,000 master's degrees were awarded, and in 1968-69, 188,600. It is projected that in 1978-79, some 368,400 will be awarded. Some 9,400 doctorates (outside of medicine, law, and other first professional degrees) were awarded in 1958-59, and 26,100 in 1968-69.[75] Naturally, all of these degree holders will harbor expectations of finding places in the work force commensurate with their skills.

Another phenomenon of our times is the growth of participation in adult education. In 1969, among persons 17 years of age and older and not enrolled in a regular school (high school, college, or university) 10,356,000 Americans participated as students in some form of adult education.[76]

Still another phenomenon is increasing diversity and flexibility among institutional and individual educational programs. While this diversity is too extensive to be explored here in detail, one statistic, related to those involved with adult education, appears significant: over 55 percent of all those enrolled in educational programs beyond the secondary level are part-time students.[77]

---

[73] Ibid.

[74] Social Indicators 1973, op. cit., p. 107.

[75] Education for a Nation, op. cit., p. 48.

[76] Social Indicators 1973, op. cit., p. 110.

[77] Boyer, op. cit., p. 35.

The 1974-1975 edition of the Occupational Outlook Handbook, produced by the Bureau of Labor Statistics, and forecasting employment prospects for more than 850 occupations through the mid-1980's, includes these projections:

1. One-third of job openings through 1985 will result from employment growth (two-thirds will replace workers who die or retire).

2. The vast majority of the 60 million job openings becoming available between 1972 and 1985 will be open to persons who have not completed four years of college.

3. However, jobs requiring a college degree (professional and technical jobs) will continue to increase faster than jobs in any other occupational group.

4. Educational requirements will continue to rise for most jobs, including clerical and blue collar.[78]

The significance of the trends in education cited above for the problem of grade creep appears to include the practical certainty of further increases in the number of people becoming educated, in the number of people achieving the skills and status of advanced degrees, in the availability of greater competence to cope with the explosions in knowledge and in technology, in the availability of advanced skills, in the costs of increasingly diversified educational programs, in lifelong participation in educational programs (e.g., at intermittent stages while still members of the work force), in the number and diversity of skills required for administration, and in expectations of higher status and pay among entrants into the work force.

Affecting all aspects of American society, the general course of education will be upward toward more and better education, but details of form, structure, and outcomes are largely unpredictable. Perhaps the most incisive observation about the course of education in the future was expressed by Marion Levy, who wrote in 1972: "In all previous societies, education existed for what was regarded as a predictable future; for us, education is for an unknown future."[79]

---

[78]Behavioral Science Newsletter for Research Planning, Bethesda, Md.: Vol. II: No. 9 (May 17, 1974), pp. 4-5.

[79]Marion J. Levy, Jr., Modernization; Latecomers and Survivors, (New York: Basic Books, Inc., 1972). Quoted in review by Dudley Kirk, American Journal of Sociology, 79:5 (March 1974), p. 1358.

E. Urbanization.

A major influence on the way American society is organized is the relentless shift from rural life to urban life. It will be recalled that modern technology had to be applied to agriculture in order to permit, in America, far lesser proportions of the population to be required on the soil. As recently as 1929, 25 percent of Americans were involved in farming, but the shift from the farm has been rapid. In 1950, 15.3 percent lived by farming; by 1960, 8.7 percent, by 1965, 6.4 percent, and some predictions hold that less than 4 percent will still be involved in 1975.[80]

One reason for the decay of country towns and cities in the United States is the phenomenal growth of the nation's major metropoli, which are acting as population magnets on an enormous scale. Another is that rural towns are becoming less and less centers for the agricultural communities that surround them, with the result that their main economic base is decaying.[81]

In 1789, the population of the United States was approximately 4 million (750,000 black). Only 200,000 people lived in "urban areas," places with "more than 2500" (New York had 33,000). Few people traveled far from their small communities, or knew persons beyond their area. Daily life, except for candles and kerosene lamps, followed the sun.[82]

In 1969, 70 percent of the American population lived and worked in cities. Cities of the United States are gaining new population at the rate of 100,000 people per week, so that within 25 years the urban proportion can be expected to be over 90 percent.

In 1967, about 140 million Americans out of a total of 200 million were classed as urban dwellers; by 1980, between 75 and 80 percent of our population may live in urban territory, which would

---

[80]The decline in agriculture, essentially the production of food, needs some qualification in explanation. Though only about 6%-7% of the labor force works in agriculture, forestry, and fisheries, about 37% are still involved in "feeding the nation," including makers and sellers of farm tractors, canners, and other food processors, steel mills that produce food cans, food, transporters, food sellers, etc. (Wattenberg and Scammon, op. cit., p. 156.)

[81]David Lewis. "New Urban Structures." In Baier and Rescher, op. cit., p. 300.

[82]Bell, "Measurement," p. 150.

place almost as many persons in urban territory in 1980 as inhabited the entire United States about 1970.[83]

By 1980, if the population trend to metropolitan areas continues, as many cities will need to be built as were created in the first 200 years of America. Most growth is actually occurring at the fringes of cities, while the center city is losing population.[84]

By 2000, if certain population forecasts are borne out, at least 280 million of 340 million are expected to be classed as urban dwellers;[85] accordingly, Little and Gordon predict that the United States will have 272 planned new cities by 2000.[86]

A Kaiser Corporation forecasting project described an important effect of urbanization in this way:

> The mere increase in the number of people on our planet, if they were evenly distributed over the land areas, would not in itself produce a powerful force for change. But when people are concentrated in a small space, the force for cultural, social, and technological change increases, in much the same way that, if gases are pumped into a container, the number of collisions between the atoms and molecules in the gas will tend to rise. Seen this way, the city is an instrument for accelerating change. It creates an environment in which dense concentrations of people of varying backgrounds can come into contact every day. The product of these contacts is accelerated cultural and social change.[87]

---

[83]Philip M. Hauser and Martin Taitel, "Population Trends--Prologue to Educational Programs," Morphet and Ryan, op. cit., p. 41.

[84]William L. C. Wheaton, "Urban and Metropolitan Development." In Morphet and Ryan, op. cit., p. 139.

[85]"Toward the Year 2000: Work in Progress," Daedalus, Summer 1967. Population in 1972 was 209 million (Social Indicators, p. 249).

[86]Little and Gordon, "Some Trends," op. cit.

[87]"The Dynamics of Change," Kaiser Aluminum News Special, No. 1, 1966.

Hazard predicts, with certain qualifications, that the impacts of urbanization will tend to upgrade the following American values by 2000:

> . . . physical well-being and comfort; economic security; convenience in style of life; self-fulfillment; love and affection; leisure; friendship; intelligence; reasonableness and rationality; law and order; aesthetic beauty; equality and civil rights; peace (as urbanism over the globe, reported and interpreted by global television, reduces senses of difference); human dignity; reverence for existing life.[88]

The same forecaster predicts that urbanization will tend to downgrade the following American values:

> . . . one's own (undisciplined) pleasure-anti-social license, self-reliance, wealth, prowess and ability, success, power (except for the vicarious sense of power), freedom from interference, privacy, devotion to family, idealism (a concept too imprecise for the technics of urbanism), patriotism (urbanism will outmode the national state), and democracy. (This last item needs to be qualified: the technical management of urbanism will call for technicians whose selection cannot be safely left to balloting, but democracy in the sense of civil rights as distinguished from its political sense need not be downgraded.)[89]

Most forecasters foresee increasing urbanization, but not all. Robert Sastrow, director of the NASA's Goddard Institute of Space Studies, predicts that the long-range impact of satellite communications will disperse and decentralize mankind. Arthur C. Clarke, perhaps the most prestigious forecaster extant, agrees. Sastrow points to the major changes brought about in society by each of the four great steps in human communication: speech, writing, printing, and telephone and radio. By 1976, he says, the fifth revolution will have taken place: the launching of satellites providing cheap, multiple channels of simultaneous communications internationally. Eventually, it will be feasible for vast numbers

---

[88]Leland Hazard. "Challenges for Urban Policy." In Baier and Rescher, op. cit., pp. 320-335.

[89]Ibid.

of people to live where they please, regardless of their work. Within many lines of work, physical concentration of people for work purposes will no longer be necessary.[90]

Such a development may well in time reverse the trend toward increasing urbanization. For the current decade, however, large social institutions will have to deal with the disturbing effects of urbanization, especially the changing values and perceptions of young people conditioned by urban environments.

Massive and rapid urbanization will intensify certain tensions within the organizational structures of society. Persons raised in urban areas differ in overt and subtle value-emphasis from those raised in small towns and farms. For some time yet, organizational hierarchies will contain substantial numbers of persons raised in rural areas, with partially divergent value--emphasis from the preponderance of members of their organizations, thus extending certain tensions and difficulties with internal communications. At the same time, the pressures of increasing complexity in society will be felt most intensely in urban areas; the resulting shifts in value-emphasis will affect the ways in which organizations pursue their goals, structure their subdivisions to perform their functions, organize their work forces, and administer their people.

F. Meritocracy.

> The millions are awake enough for physical labor; but only one in a million is awake enough for effective intellectual exertion, only one in a hundred million to a poetic or divine life. To be awake is to be alive. I have never yet met a man who was quite awake. How could I have looked him in the face?
>
> --Thoreau

In his provocative 1962 book, The Excitement of Science,[91] John Rader Platt speculated about levels and distribution of intelligence. Accepting the intelligence level of the average person as 100, Platt placed the level of the moron at about 70, of the normal Ph.D. student at about 140, and of Einstein, Pasteur, and their peers at about 180 or above. Platt speculated that an

---

[90]Robert Sastrow, "Satellites May Make Earth the Smallest of Worlds," New York Times, June 9, 1974, p. E6.

[91]John R. Platt, The Excitement of Science (Boston: Houghton Mifflin Company, 1962).

IQ of 190, represented possibly by Archimedes, Newton, or Gauss, occurs in one person on earth over some 500 years; out of the US population in 1962 of 187 million, he guessed that there were about a dozen living Americans with an IQ of 180; about 300 Americans at the 170 level; about 5,000 at 160; about 100,000 at 150; and about 1 million at 140.[92] Another estimate by the Encyclopaedia Britannica says that IQ's of 140 occur in about 4,000 out of 1 million of the general population (i.e., about 3/4 million out of 187 million), and IQ's of 180 in about 6 out of 1 million persons (i.e., about 1,100 out of 187 million).[93]

Platt guessed that the average level among teachers as an occupational group would probably be in the 120's, and among members of Congress in the 130's or higher. One interesting comparison Platt makes between educational practices in Britain and the United States holds that, until recent decades, the United States attempted to send to college about 10 percent of its boys and girls, which necessarily reached down to the IQ level of the bottom of the 120's. The British, on the other hand, sent to college less than 1 percent of their young, which kept the IQ level of most of the British college-educated at the level of 135 and up.[94]

To be sure, America was slowly aiming at mass educational opportunity, whereas Britain and most other foreign countries concentrated upon education for intellectual elites. As America presses forward toward its mass education objective, the post-World War II social phenomenon of rising educational expectations has affected all advanced countries (as Jean-Francois Revel appears to insist in Section IV A); and all are striving to provide facilities for higher education far in excess of previous levels of opportunity. Few, if any, yet approach the dimensions of educational opportunity available to citizens of the United States.

It can be assumed that mass distribution of a social good inevitably vitiates the measured indicators of the average recipient. This is an aspect which we do not generally discuss in America. Our few best students compare well with the few products of even elite systems elsewhere, but the average of our mass system does not, of course, compare well with the average of an elite system. Professor George Berkley says, "The average American college graduate would have great difficulty passing the university entrance examinations in most European countries . . . A university edu-

---

[92] Ibid., p. 92.

[93] "Genius Is No Longer Such a Great Trait," New York Times, April 25, 1972, p. 14.

[94] Platt, op. cit., p. 99.

cation in Europe is usually on a level with the best graduate school education in the United States."[95]

A peculiar development, in pace with expanding college attendance, appears to be easier grading--a different kind of "grade creep," so to speak. In 1961, half of the class at Harvard graduated with honors; whereas in 1971, two-thirds received honors. At the other end of the individual performance scale, during 1964-65 at the University of Illinois, 16 percent were probationed or expelled for poor grades; whereas, during 1971, the figure had dropped to 3.7 percent. Leroy S. Burwen, Director of Institutional Research at San Francisco State, studied over 435 big, small, public, and private colleges and universities, and identified a shift in prototype overall grades from 2.4 in 1960 to 2.56 in 1969.[96] If this grade creep represents genuine achievement, it speaks well; if it merely represents escalated grading cosmetically to conceal declining achievement, we are, in view of the future's certain demands for rising performance, fooling ourselves in a dangerous way.

The point to be highlighted here is that the powerful pressures toward more widespread education appear to be relentless in this increasingly complex world, in America and other modernized and modernizing countries. In a large sense, however, one wonders about the interaction between intelligence and education. It would probably not be argued that education unquestionably increases the knowledge and competence of the individual, and permits each individual throughout a society, in contrast to restricted elites in former times, to exploit and focus and apply more effectively whatever intelligence he possesses. But the question asked here (and in many quarters throughout history) is, can education increase intelligence? As we confront the increasingly complex and demanding world of the future, and as we produce more and more college graduates, can we expect that the average level of intelligence in whole societies will rise?

We do not propose to enter this currently controversial area. Evidently IQ scores of selected children have been raised for variable periods after their participation in various carefully devised programs; but whether the differences are due to cognitive, psychological, cultural, educational, or other experiential variables has not been established. We are not even certain yet of just what intelligence is (note the familiar circuitous response: "Intelligence is what intelligence tests measure"); and judging by

---

[95]Berkley, op. cit., pp. 72-73.

[96]Iver Peterson, "Flunking is Harder as College Grades Rise Rapidly," New York Times, March 19, 1972.

the claims of various proponents in the field, the more we learn about intelligence, the more we realize we have yet to learn.[97]

In any event, if it transpires that IQ is an innately-stabilized, largely-unchangeable factor, and that the distribution of intelligence is likely to remain indefinitely in a given population in the same proportions as in the past, certain implications merit attention. If the same proportions of societies are limited in possession of higher intelligence (i.e., if the average IQ remains 100), in view of the increasing complex world, greater and greater emphasis will inevitably be given to the identification, development, education, and preservation of individuals possessing superior brainpower.[98]

A few marginal indicators are available.

Television programmers appear (consciously or unconsciously) to aim at a mental level of the mass audience which keeps general pace with the median educational level. In 1950, TV networks aimed at the prevailing median level of all Americans over 25, which was 9.3 years, or ninth-grade level. By 1960, the educational level had risen to 10.5 years; and the level of TV programs appeared to have risen accordingly.[99]

Another measure of the onrushing demands of this complex world, and of the response which society is in the process of making, is the rather well-circulated estimate by Derek Price that of all the true scientists who have ever lived during mankind's entire span on earth, some 90 percent are living today.[100] (Edwin Parker points out

---

[97]One highly publicized controversy concerns alleged genetic differences in intelligence according to ethnic origins; three of the best-known participants in this controversy are Herrnstein, Jensen, and Schockley. For a broader attack on intelligence classification see, for example, Evelyn Sharp, The IQ Cult (New York: Coward, McCann, & Geoghan, 1972); and Norman Daniels, "The Smart White Man's Burden," Harper's Magazine, October 1973, pp. 24-26, 28, 32, 34, 40. A specific adversary orientation is reflected in Alan Gartner, et al, eds., The New Assault on Equality: IQ and Social Stratification (New York: Harper & Row, Publishers, Perennial Library), 1974.

[98]A substantial amount of such stratification already occurs, of course, especially in regard to education, in that, for example, of all members of the work force who have a college education, 65 percent are in the "Professional category," and 85 percent are in the "professional and managerial" category. Seymour Wolfbein, Work in American Society (Glenview, Ill.: Scott, Foresman and Company, 1971).

[99]Wattenberg and Scammon, op. cit., p. 231.

[100]Platt, op. cit., p. 96.

that the same statement would have been true in Newton's time, and in each "period" since).[101]

Another development, admittedly ambiguous, is a steady 11-year decline in average scores achieved nationwide by high school students taking the Scholastic Aptitude Test (scaled from 200 to 800) for admission to higher education. In 1962-63, average scores were 478 on the verbal test and 502 on the mathematical test. Here are the comparable scores over the most recent eleven straight years:[102]

	Verbal	Mathematical
1962-63	478	502
1964	475	498
1965	473	496
1966	471	496
1967	467	495
1968	466	494
1969	462	491
1970	461	488
1971	454	487
1972	450	482
1973	445	481

In 1972, in the verbal portion, 1,573 American male secondary school students achieved scores in the 750-800 range; but in 1973, only 987 achieved such scores. Are the tests becoming more difficult? The College Board says no. Because more students, who previously would not have tried to enter college, are now taking the tests, has the quality of the average applicant, or quality of preparation, declined? Some educators believe this is occurring, although one official of the College Board insists that the number of students taking the SAT's leveled off at about one million several years ago. Is the decline of the Work Ethic responsible, with less motivation toward achievement and excellence? The executive director of the College Board's program says: "The question of what is causing the drop is something none of us can answer."[103]

Nevertheless, the drop is occurring, in the direction that seems the opposite of what appears needed to cope with the future.

---

[101]Edwin B. Parker, "The New Communication Media," in C. S. Wallia, ed., Toward Century 21 (New York: Basic Books, Inc., 1971), p. 98.

[102]Gene I. Maeroff, "Students' Scores Again Show Drop," New York Times, December 16, 1973, p. 1.

[103]Ibid., p. 26.

Is there any direct relationship between leadership in social institutions and intelligence, or education? A few years ago, the Air Force canceled a special program featuring selection of applicants for officer appointments who had achieved top college grades, claiming that repeated study had not confirmed any correlation between high academic record and effective performance as an officer. In a similar vein, Douglas McGregor, the eminent scholar of organization and leadership, wrote that ". . . there is not much evidence that high academic achievement represents a necessary characteristic for industrial leadership. There may be a positive correlation, but it is not large enough to provide a basis for a recruitment policy."[104] Intellectual capacity, he said, "is only one reason why industry seeks the bulk of its potential manager resources among college graduates today."[105]

Lipset and Bendix make an interesting distinction. "In every complex society there is a division of labor and a hierarchy of prestige. Positions of leadership and social responsibility are usually ranked at the top, and positions requiring long training and superior intelligence are ranked just below."[106] (Italics added.)

Cited above are a very few considerations--knowledge, education, intelligence--affecting executive status and progression in large organizations; other aspects of leadership (or management, or direction, or command, or executive performance or whatever one calls the directing function) are discussed elsewhere in this paper.

The relationship between brainpower and social and work structures will probably become more critical. In a typical population, roughly 23 percent have IQ's of less than 90; most of these persons cannot expect to become highly skilled or be entrusted with responsible positions even in relatively primitive societies. Some 7.3 percent have IQ's of less than 80; most are at best marginally employable. Some 2.7 percent have IQ's of less than 70 and are not employable at all.[107] Dennis Gabor stated, "By the logic of machines,

---

[104]Douglas McGregor, "An Analysis of Leadership," in William R. Lassey, ed., Leadership and Social Change (Iowa City, Iowa: University Associates, 1971), p. 23.

[105]Ibid.

[106]Seymour Martin Lipset and Reinhard Bendix, Social Mobility in Industrial Society (Berkeley: University of California Press, 1959), p. 1.

[107]"Automation and Unemployment," op. cit., p. 20 (italics added).

the IQ bracket 75-100 has no place in modern factories. (Those below 75 can be employed as sweepers; it is not worthwhile to replace them by machines.) Soon the computers will make it economical to replace many workers in the office with IQ's of 100-115."[108] One is impelled to wonder how long a government in any country in the world would expect to last which permitted unemployment to occur on the scale that would result. Nevertheless, says the Chamber of Commerce of the United States, in a prediction which goes to the heart of this paper, "Every indication we have of the shape of the future shows rising requirements of employability and therefore a growing percentage of any age-group which is unemployable."[109]

British sociologist Michael Young has discussed the possible resurgence of authority through meritocracy. There are no real revolutions, he says, only slow accretions of ceaseless change that reproduce the past while transforming it. In this sense, an elite may arise in which promotion by merit replaces promotion by seniority, in response to forces which proved too strong for the gerontocracy; namely, pressure from the young, support from many of the old (everyone has someone above him), or improvement of merit rating. Stratification will remain, and the gulf between classes will widen with the acceptance of meritocracy.[110] This potential development, too, contains profound implications for organizational grade structures.

Economist Kenneth Boulding comments prophetically:

"The greatest human tragedy is to feel useless and not wanted, and with the rise in intelligence of machines, we may face a period in which the human race divides into two parts, those who feel themselves to be more intelligent than machines and those who feel themselves to be less."[111]

Whether greater special status, prestige, authority, and privileges will accrue to brainy individuals in the future cannot be predicted (especially in the modern atmosphere of strong egalitarianism); but the probablility seems better than 50 percent. I am not

---

[108] Jungk and Galtung, op. cit., p. 162.

[109] "Automation and Unemployment," op. cit., p. 20.

[110] Michael Young, The Rise of the Meritocracy, 1870-2033. (Baltimore: Penguin Books, Inc., 1961), p. 106 ff.

[111] Boulding, op. cit., p. 213.

venturing here a prediction, or an attempt to forecast the enormous changes in social structure that would accompany such a development. Perhaps some counterpart of Plato's philosophers, or the Alphas of Huxley's Brave New World, might even emerge. Can any direction be discerned? Will we develop enough adequate leaders of social institutions?

We are in highly speculative areas here. In relation to the decline of the Work Ethic and the emergence of leisure as forces likely to disturb the "settled routines" of the distribution of labor, we may speculate that decline in commitment to work is merely an advance surface manifestation of a deeper-running dynamic: a declining requirement for personal work in future society, and consequent drastic redistribution of work (we shall discuss the changing work week in the next chapter).

We may recall Huxley's visionary Brave New World, in which the lower classes are confined to unrelieved hedonism, while serious work and thought are reserved for the relatively small numbers of ruling Alphas.

We no longer dismiss science fiction as mere entertainment, for out of science fiction have emerged some of the most imaginative conceptions of future developments. Riesman describes one such concept relevant here, presented in a short story by Frederick Pohl,[112] involving a future society in which the upper class is excused from consumption and is privileged by being allowed to live in smaller houses, to drive smaller cars, to have fewer services performed, and, best of all, to work four or five days per week! Does this startling concept give us a faint glimmer of the shape of the future?

We are not, of course, concerned with pursuing speculative details; but we are concerned with trends. One area of concern with the future will certainly involve the role and shape of hierarchies. Will hierarchies be of negligible importance, moderate importance, or critical importance? Will some form of meritocracy emerge as a fundamental organizing principle? The available indicators are conflicting, but there are enough to suggest that the formula IQ + performance = merit may emerge as a dominant organizing principle in future societies.[113]

---

[112]Frederick Pohl, "The Midas Plague." The Case Against Tomorrow (New York: Ballantine, 1957).

[113]Donella H. Meadows; Dennis L. Meadows; Torgen Randers; and William S. Behrens, III, The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind (New York: Universe Books, 1972).

CHAPTER V

THE CHANGING AMERICAN LABOR FORCE

A. General.

As we take up the dynamic area of the work force in modern American society, attempting to understand what is happening in the changing ethos of the worker, the manager, the organization, and the interrelationships among them, it may be helpful to recall attitudes toward the mass of workers which were held not too long ago but which today appear untenable in advanced societies.

Adam Smith's classic, The Wealth of Nations, appeared in the same year as the Declaration of Independence. The following passage is relevant here:

> The understandings of the greater part of men are necessarily formed by their ordinary employments. The man whose life is spent in performing a few single operations . . . has no occasion to exert his understandings . . . He generally becomes as stupid and ignorant as it is possible for a human creature to become.[1]

The great innovator of scientific management, Frederick Taylor, enunciated this requirement for an iron worker in 1947:

> One of the very first requirements for a man who is to handle pig iron as a regular occupation is that he shall be so stupid and so phlegmatic that he more nearly resembles an ox than any other type.[2]

In sharp contrast meaningful to our own times, modern movements are pursuing a strong course toward what some call "industrial democracy."[3]

---

[1]Adam Smith, An Inquiry Into the Nature and Causes of the Wealth of Nations, (New York: Modern Library, 1937), p. 734.

[2]Frederick W. Taylor, The Principles of Scientific Management, (New York: Harper and Brothers, 1947), p. 59.

[3]See, for example, Job Power, 1973, for an account of the eminent contributors to theoretical development concerning modern work and organizations, including Chris Argyris, Abraham Maslow, Douglas MacGregor, Frederick Herzberg, Rensis Likert, Louis Davis, Warren Bennis, Peter Drucker, and others.

How can work be described? One definition defines work as any task meaningful to the worker that provides him an opportunity to achieve psychological growth, to become more competent.[4] Three earlier analysts of work--Gurin, Veroff, and Feld--based on the condition that much of man's life is spent at his job, concluded that, potentially, a man's work may be the focus of his identity, his social status and prestige, his feelings of masculinity, worth, and competence. Thus, a man's work is very often the vehicle for achieving independence, competence, and growth; work comes to mean having a purpose in life, gaining a sense of accomplishment, and expressing oneself.[5]

Daniel Bell identifies the two major processes or out time as the accelerating pace of change, and changes in scale which produce structural differentiation.[6] According to Bell, post-industrial society can be perceived in five dimensions:

- in the creation of a service economy
- in the preeminence of the professional and technical class
- in the centrality of theoretical knowledge in the course of innovation and policy formulation in the society
- in the possibility of self-substaining technological growth
- in the creation of a new "intellectual technology".7

We shall discuss in several places the change from the predominance of production to the predominance of service in our economy. We cite here one preliminary symbolic indicator of the change in organization structure (not to mention other aspects of society and the work force) by transition to a service economy: in 1930 hospitals had 3 employees for every 10 patients; in 1971, hospitals had up to 30 employees per 10 patients.[8]

One relevent perspective is an alleged malaise among American workers, from manual laborers to successful executives. Various diagnoses have been offered. One explains:

---

[4]David S. Whitsett, "Human Growth in the Formal Organization," Air University Review, May-June 1969.

[5]Ibid.

[6]Bell, "Measurement," p. 152.

[7]Ibid., pp. 152-153.

[8]Peter Drucker, "The Surprising Seventies," Harper's Magazine, July 1971.

> . . . In an age when myths are dying, ideologies come to the fore. Thus the bourgeois myths of Horatio Alger and all variations of the Protestant ethic of hard work, including the idea of progress, are now seen by our age of ideology as mere weapons of the bourgeois ruling class.[9]

Whatever the cause, the condition of growing alienation from work is widely reported.[10] For example, the American Management Association polled 2,821 management personnel in the fall of 1972. Some 40 percent of mid-managers and 52 percent of supervisors reported that they found their work unsatisfying; nearly 50 percent said they had changed, or had seriously considered changing, their occupational field. Nearly 30 percent claimed that their job requirements had adversely affected their health during the preceding 5 years, including increased strain and tension accompanying heightened day-to-day pressures.[11]

With or without alienation, "work as the financial and psychological center of life is declining," due to growth and depersonalization of corporations, longer paid vacations, increased number of longer weekends, the desire (intensified by advertisements) to "get away", more education, more discretionary income, fewer working hours, and longer commuting routes.[12]

---

[9]E. Digby Baltzell, Book review of Georges Sorel, The Illusions of Progress, in American Journal of Sociology, Vol. 79: No. 5 (March 1974), p. 1350.

[10]Representative literature includes Best, op. cit.; Judson Gooding, The Job Revolution (New York: Walker and Company, 1973); US Department of Health, Education, and Welfare, Work in America, December 1972; "The Job Blahs: Who Wants to Work?" Newsweek, March 26, 1972: "The Great Escape: More Affluent Adults Quit Corporate World to Lead Simpler Lives", Wall Street Journal, February 19, 1971, p. 1; and John R. Hinrichs, The Motivations Crisis: Winding Down and Turning Off (New York: American Management Association, 1973). For certain caveats, see Frank E. Armbruster, The Forgotten Americans (New Rochelle, NY: Arlington House, 1972). A recent confrontation with 13 dilemmas involved in concern with the quality of work is provided by Ted Mills, "The Thirteenth Dilemma," Atlanta Economic Review, May-June 1974.

[11]Trend Report, No. 7, New York: Institute of Life Insurance, September 1973.

[12]"American Life Styles of the 1980's", Report by the Management Research Center of the University of Rochester, for the Lincoln First Bank of Rochester, New York. Cited by Carl H. Madden, Clash of Culture (Washington: National Planning Association, 1972), p. 98.

The "Age of Leisure" has just begun, and will accelerate during the 1970's. The current decade will esperience increased government support for leisure, recreation, and cultural activities; increased services for the very young, elderly, ill, and handicapped; more public-supported performing arts; more education and craft sponsorship for leisure; more commercial leisure activities (TV, travel, sports, theaters); increased physical and mental health activities; and professionalization of leisure-activity workers.[13]

Small business accounts for 80 percent of business in the United States, and 60 percent of the workers. Of 11.4 million businesses in the United States, 9.5 million are small proprietorships; fewer than 1 million are partnerships; and 1.5 million are corporations. Of all US workers, 27.5 percent work for firms that employ 500 or more, and 60 precent for firms with fewer than 100 employees (40 percent work for firms with fewer than 50).[14] However, 90 percent of all the taxes collected from the 1.5 million corporations are paid by the largest 1,500 corporations.[15]

Despite claims that corporations dominate American life, controlling government and other social institutions, it appears that the role of corporations, while unquestionably major participants in American economic life, is not expanding. In 1950, corporations generated about 56 percent of the national income; and in 1968, they still generated about 56 percent.

> . . . most people do not work and never have worked for corporations; most production does not and never has taken place in large corporations . . . In the future, the large corporation is likely to be overshadowed by the hospitals, universities, research institutes, government agencies, and professional organizations that are the hallmarks of a service economy.[16]

---

[13] Ibid.

[14] Riva Poor, 4 Days, 40 Hours (New York: New American Library, 1973), p. 213.

[15] Advertisement by Forbes Magazine, New York Times, May 10, 1974, p. 64.

[16] Madden, op. cit., p. 86.

For comparison of what happens in the United States and other countries, another indicator of the bellwether status of the United States can be gleaned from the following selective table:

Percentage of Economically Active Male Population Engaged in Professional and Technical Occupations[17]

USA	23.1
Canada	19.7
Australia	14.6
New Zealand	14.1
Sweden	14.1
West Germany	12.0
France	11.5
UK	11.5
Japan	9.0
Yugoslavia	6.5

In the United States economy, the crossover point from predominantly blue-collar workers to white-collar workers occurred in 1955.[18] In addition, in the United States today, more than 1 out of 4 in the labor force works for a non-profit organization (government, private schools and universities, hospitals, foundations, churches, philanthropies, etc.[19]

The United States is the only nation in the world in which the service sector accounts for more than half the total employment and more than half the gross national product. The American is the first service economy, and the United States is the first nation in which the major portion of the population is engaged neither in agrarian nor industrial occupations.[20]

---

[17]C. L. Taylor and M. C. Hudson, eds., World Handbook of Political and Social Indicators (2d ed.) (New York: Yale University Press, 1972), p. 335 (data years vary from 1960 to 1962).

[18]Carl Dean Snyder, White Collar Workers and the UAW (Urbana, Ill.: University of Illinois Press, 1973), p. 1.

[19]Bell and Kristol, op. cit., p. viii.

[20]Bell, "Measurement", p. 157.

The following table illustrates the world situation in this respect:[21]

	Total (millions)	Percentage by Sector		
		Agriculture	Industry	Service
World labor force	1,296	58	19	23
More developed regions of North America	77	8	39	53
Western Europe	60	14	45	41
USSR	111	45	28	27
Africa	112	77	9	14

B. Selected Labor Force Characteristics.

Essential to understanding current grade creep in one or more major social institutions is understanding of forces and trends in the American work force. Some trends affect the entire working force; some affect principally subdivisions or segments of the work force (occupations, executives, unions, etc.); some overlap with other arenas of attention (such as organizations, which are addressed in the next chapter of this paper); and some work-force trends are specific manifestations reflecting more general forces operating in the society at large.

We begin with several statistics portraying the dimensions of the labor force and changes in it. A few statistics are included from earlier periods, but emphasis is given to the period from about 1960 to date. One overall impression one receives from these figures is that of relentless growth and rapid expansion.

The statistics used here are highly aggregated. In contrast to the broad categories used here, the Census Bureau uses approximately 300 detailed occupational groups, combined into 40 occupational groups, and further combined into 12 major occupational groups. Actually, about 30,000 job titles are listed.[22]

Striking changes are occurring in the age-group composition of the work force. One of the most persistent is the steady decline of men aged 65 and over who work. At the turn of the century, roughly two-thirds of men 65 and over were participants in the labor force.

---

[21] Ibid., p. 154 (drawn from the International Labour Review, Jan-Feb, 1967).

[22] Wattenberg and Scammon, op. cit., p. 153.

By 1960, their participation had declined to one-third; the decline is attributed to the contraction of agriculture and its work opportunities for older men, compulsory retirement at 65 in industry, and the availability of social security benefits at 62 or later.[23]

Equally significant is the declining proportion of young men in the work force. At the turn of the century, one-fifth of youths aged 10-15 were in the work force, as were two-thirds of males aged 14-19; by 1960, the average age of full-time entrance into the work force was 18, and less than half of males aged 14-19 are in the work force.[24]

Another development of considerable significance is the decline in overall male participation in the entire work force, and the steady growth of the female work-force proportion.[25]

The size of the American labor force is shown in this table:[26]

Year	Total US population 14 yrs. of age and over	Number of age group in labor force	Percent of population 14 yrs. and over in work force
1900	51,438,000	27,640,000	53.7
1920	74,144,000	40,782,000	54.3
1940	101,103,000	53,299,000	52.7
1960	126,277,000	69,877,000	55.3
1970[27]	142,366,000	85,903,000	60.3
1980 (projected)	167,339,000	101,809,000	60.8

---

[23]Juanita Kreps, Automation and Unemployment (New York: Holt, Rinehart, and Winston, Inc., 1964), p. 18.

[24]Ibid., pp. 18-19.

[25]Ibid., p. 18.

[26]Figures for 1900, 1920, 1940 from Historical Statistics of the United States, p. 70. Figures for 1960 from Historical Statistics of the United States: Continuation to 1962 and Revisions, p. 13. Figures for 1970 and 1980 from Manpower Report of the President 1974.

[27]In 1966, the minimum age for inclusion in work force statistics was raised from 14 to 16.

The size of the labor force, by sex (including the armed forces) is shown in this table:[28]

	16 yrs. and over, Male	16 yrs. and over, Female
1949	45,097,000	17,806,000
1959	48,405,000	22,516,000
1969	53,688,000	30,551,000

Allied to the preceding table is the following one,[29] which shows the percentage of eligible male and female participarion in the labor force, verifying that male participation is declining and female participation is increasing:

	Percent Eligible Males in Work Force	Females
1949	86.9	33.2
1959	84.5	37.2
1969	80.9	42.7

The following table[30] reflects increasing diversity and flexibility in the work force; it shows the number and percentage of voluntary part-time workers (less than 35 hours/week) in the labor force:

1956: 10% (5.2 million) 1972: 14% (10 million)

The following table[31] shows the drastic changes in the distribution of labor among white collar, blue collar, service, and farm workers:

	White collar	Blue collar	Service	Farm
1900	18%	36%	9%	37%
1969	47%	36%	12%	5%
1975 (projection)	48.6%	34.1%	13.8%	3.7%

---

[28] Handbook of Labor Statistics (Washington: USGPO, 1970).

[29] Ibid.

[30] Ibid.

[31] Seymour Wolfbein, Work in American Society (Glenview, Ill.: Scott, Foresman, & Company, 1971), p. 117.

The following table[32] shows the internal distribution of white collar workers as percentage of the total work force. Note that the fastest growth is among the most highly trained, doubling over the 22 years from 1947 to 1969:

	Professionals	Propletors, Mgrs. Officials	Clerical	Sales
1900	4%	6%	3%	5%
1947	7%	10%	12%	6%
1969	14%	10%	17%	6%
1975 (projected)	14.8%	10.4%	17%	6.5%

The following table[33] shows similar internal distribution among blue-collar classifications, as percentage of total work force:

	Craftsmen	Operatives	Laborers
1900	10%	13%	13%
1947	14%	21%	6%
1969	13%	18%	5%
1975 (projected)	13.1%	16.9%	4.1%

As mentioned earlier, in the US economy as a whole, 11 1/2 million job shifts occur each year, involving 8 1/2 million different persons. Half of these persons shift to a different industry and a different occupation; another 20 percent to a different industry but the same type of job; and an additional 8 percent to a different job within the same industry. This job mobility is consistent with general physical mobility; each year, for example, 11 million Americans move to a different county, 50 percent of them to a different state.[34]

These figures do not provide a sense of the real dimensions of mobility in the American work force, nor of the association of mobility with the substantial differences in regional unemployment concealed in aggregated national statistics--factors which, in turn, affect availability in different sectors of the manpower pool and the attractiveness of, for example, military service in different

---

[32] Ibid.

[33] Ibid.

[34] "Automation and Unemployment," op. cit., p. 26.

regions. Robert MacBride provides a more penetrating analysis[35] of labor mobility in a single year, 1964, and of unemployment:

> Hidden beneath national averages is continuous movement into, out of, between, and within labor markets. In 1964, for instance, the average number of persons in the labor force was 74 million, with about 70 million employed and 3.9 million unemployed. But that is only part of the story, for in the same year:
>
> 87 million people were in the work force at some time,
> 85 million different people held jobs,
> 43 million entered or reentered the labor force,
> 42 million left the labor force permanently or temporarily,
> 1.7 million looked for work but did not work at all,
> 14.1 million different people experienced some unemployment,
> 8 million or more changed jobs voluntarily or involuntarily.
>
> The unemployment rate by State ranged from 2.9 to 7.9 percent, by broad occupations from 0.5 to 10.6 percent, by broad industry group from 2.3 to 9.9 percent, by age from 2.7 to 17.8 percent, and by race from 4.6 to 9.8 percent. About 1 out of every 15 persons moved his place of residence. None of these figures includes the vast amount of constant change in jobs and job content which is always going on within firms.

We have alluded to "meritocratic" principles, which have a faint aura of elitest principles, yet they are essentially the same classic principles as those advocated, for example, by John Gardner in his well-received book Excellence (1961). These are reflected in reverse in some current contexts, and may constitute one of the counter-forces that exert pressures to de-escalate status in organizational structures. One description of this possibility is provided by Mr. William Papier, Director of the Division of Research and Statistics, Ohio Bureau of Unemployment Compensation, who suggests that our society does not really foster higher aspiration and accomplishment. He points to the end result of attempts to eliminate unemployment by hiring, keeping, and compensating manpower on any basis other than merit, as forcing the

---

[35]Robert MacBride, The Automated State (Philadelphia: Chilton Book Company, 1967), p. 220.

absorption of marginal and substandard workers into the labor force. Mr. Papier expects the bulk of such workers to be absorbed by government--local, state, and Federal, vitiating the quality of service provided in a service economy.[36]

In 1947, employment stood at 58 million; in 1971, at 72 million. Virtually this whole increase was concentrated in the service industries (banks, hospitals, schools, government, stores, etc.).

In 1947, 51 percent of all workers were employed in goods-producing industries (agriculture, mining, manufacturing, construction, etc.); but by 1957, the percentage had dropped to 46 percent, and by 1962 to 42 percent. Between 1950 and 1970, the following changes occurred in major work groupings as percentage of entire labor force:[37]

- Professional, technical, and similar: up 6 percent; managers, proprietors, and officials, up 2 percent; clerical and related, up over 5 percent; service workers (outside of household), up 3 percent.

- Salesworkers, down 1 percent; craftsmen and foremen, down 1 percent; operatives, down 2 percent; non-farm laborers, down 1 1/2 percent; private household workers, down 1 1/2 percent; farmers and farm managers, down 5 1/2 percent; farm laborers and foremen, down 2 1/2 percent.

It may be relevent to note that in 1961, the Bureau of Labor Statistics estimated that during the 1960's (exclusive of farms), the need for unskilled non-farm workers would hold at the same level, while US population would grow by 28 million people.[38] By 1975, the unskilled will constitute only 4 percent of the labor force (approximately 2 1/2 million jobs are lost annually to automation).[39]

---

[36]Cited in Irving H. Siegel, ed., Manpower Tomorrow: Prospects and Priorities (New York: Augustus M. Kelley, Publishers, 1967), pp. 191-193.

[37]Social Indicators 1973, op. cit., p. 121.

[38]William W. Brickman and Stanley Lehrer, Automation, Education, and Human Values (New York: School and Society Books, 1966), p. 39.

[39]Little and Gordon, "Some Trends," op. cit.

The following table[40] reflects the increasing qualifications reflected in the work force. It shows the educational attainment among persons 18 years of age and over, who are in the work force:

	Total persons in the work force 18 and over	Percent Completed H.S.	Percent Completed College
Oct 1952	60,772,000	26.6	7.9
Mar 1959	65,842,000	30.3	9.5
Mar 1969	76,753,000	38.4	12.6

It is of special concern to this paper to indicate the changing dimensions of that part of the work force employed by the government. The following table[41] shows the number of civilian employees of all levels of American government--federal, state, and local:

Year	Number in all Government	Federal Civilian	Executive Branch Civilian
1900	1,094,000	356,754	--
1920	2,371,000	655,265	--
1940	4,371,000	1,128,000	--
1950	6,402,000	2,117,000	--
1960	8,808,000	2,421,000	--
1969	--	3,076,000	2,371,000
1970	12,535,000	2,921,000	2,884,000
1973 (preliminary)	13,652,000	2,624,000	--

Concerning employment in government, a study of grade creep may note in passing certain comments by the Public Personnel Association of Chicago: While some public agency jobs are close counterparts to some in private industry, there are many occupations that are unique to government, without parallel in the private sector, generating unique problems in salary determination and administration.[42] Another comment is not without relevance, to

---

[40] Handbook for Labor Statistics, US Department of Labor, (Washington: USGPO, 1970).

[41] Historical Statistics of the United States, p. 709, and supplement to same source, entitled Continuation to 1962, p. 96; also see Stanley Lebergott, Manpower in Economic Growth: The American Record Since 1800 (New York: McGraw Hill, 1964), p. 517, and 1974 Manpower Report of the President, p. 312. Also American Almanac for 1973, p. 400.

[42] Kroeger, op. cit., p. 9.

the effect that private management enjoys considerably greater confidentiality in making arrangements with employees,[43] a situation which results in greater visibility for status and pay structures of the armed forces and other elements of public employment; generally speaking, less controversy surrounds private structures, for it is more difficult to disseminate comprehensive statistics about them.

Increasing specialization, another significant trend, has been referred to in several places in this paper. Numerous indicators emerge; for example, in June 1974, Vice Admiral Curtis, Surgeon General of the Navy, observed, "About 10-15 years ago, 25 percent of all doctors in the US were specialized. Today, more than 75 percent are specialized."[44] We noted in the previous chapter that the number of distinct scientific specializations listed in the National Register of Scientific and Technical Personnel increased from 54 to over 900 within 20 years.

C. Compensation.

Another area critical to understanding changes in the work force and their relationships to the American economy is that of output and compensation.

The linkage between rising productivity and rising wages has played a part in wage and status escalation. Despite the pessimism of the classical economists, including Marx, real wages have risen steadily in the United States for a hundred years; per capita income has increased, on the average, 2 percent per year since 1870. Between 1909 and 1949, in the private nonfarm sector of the US economy, output per man-hour rose 104.6 percent. Although capital per worker increased during this period, the most important generator of increased productivity was identified in 1957 by Robert M. Solow: technological change.[45] Accepting Solow's analysis in large part, Daniel Bell nevertheless insists that the entire responsibility must include political, sociological, and cultural changes.[46]

---

[43] Ibid.

[44] "Health Care Crisis," The Retired Officer, July 1974, p. 6.

[45] Bell, "Measurement," op. cit., pp. 176-178.

[46] Ibid.

The following table[47] shows the average annual rise in output per man hour (farm and non-farm), and the average rise in compensation and real compensation (keeping the GNP in constant 1958 dollars):

	Rise in Output per Man Hour	Rise in Compensation per Man Hour	Rise in Real Compensation per Man Hour
1947-1953	4.2%	6.5%	3.4%
1953-1961	2.6%	4.6%	3.0%
1961-1965	3.9%	4.4%	3.1%
1965-1967	2.7%	6.5%	3.6%
1967-1968	3.2%	7.3%	3.3%

This table, and other statistical indicators employed throughout this paper, offer inarguable evidence that both productivity and compensation relentlessly increase throughout the American labor force. Resulting pressures on grade structures, in the military establishment and every other major institution of society, are inexorable.

The following table[48] shows the escalation in average annual salaries across selected Professional, Administrative, and Technical occupations over the eight years between 1961 and 1969:

	Chief Accountants	Attorneys	Mgrs. of Ofc. Svc.	Dirs. of Pers.	Chemists	Engrs.
1961	$15,012	$20,712	$12,024	$14,452	$18,276	$19,056
1969	20,586	28,841 (1968)	16,291 (1968)	20,586	27,092	24,020

The following table[49] shows an escalating index of real compensation per man hour for all persons employed in the private sector of the American economy:

1947	36.2
1950	42.8
1960	71.7
1970	124.6
1973 (preliminary)	153.4

---

[47] Congress and the Nation, Vol. II: 1965-1968 (Washington: Congressional Quarterly Service, 1969), p. 120.

[48] Handbook of Labor Statistics, 1970, Washington: USGP., p. 212.

[49] Manpower Report of the President 1974, p. 375.

The median earnings of all workers, in 1971 constant dollars, increased from $6,116 in 1956 to $8,102 in 1971 (9,399 for males).[50] The median family income increased from $5,500 in 1947 to $10,300 in 1971.[51]

A broader range of years shows the changes in average annual earnings among all full-time employees in selected industries:[52]

Year	Communications and Utilities	Professional Services	All Gov't. Fed., State, Local	Federal Civilian
1900	$ 470	$ 543	$ 584	$ 940
1920	1238	979	1245	1707
1940	1718	1207	1344	1866
1960	5642	3700	4683	5836

Emphasizing the universality of escalation of compensation, the following chart[53] shows average earnings of occupation groups over recent years in six countries, expressed in each instance as multiples of the earnings of male unskilled laborers:

	United Kingdom			*Sweden*			*Norway*			*Denmark*
	1935	1955	1960	1953	1957	1963	1956	1960	1964	1965
Unskilled manual	1·00	1·00	1·00	1·00	1·00	1·00	1·00	1·00	1·00	1·00
Skilled manual	1·51	1·43	1·49	...	...	...	1·14	1·14	1·15	1·24
Clerks	1·50	1·20	1·30	1·30	1·30	1·30	1·00	1·10	1·00	1·30
Lower admin. and professional staff	2·40	1·40	1·60	1·50	1·70	1·80	1·20	1·30	1·30	2·10
Higher admin. and professional staff	3·80	3·40	3·50	2·00	2·90	3·10	2·20	2·40	2·40	4·30

	France			*West Germany*			*United States*			*Italy*
	1956	1962	1964	1957	1961	1965	1939	1950	1959	1·00
Unskilled manual	1·00	1·00	1·00	1·00	1·00	1·00	1·00	1·00	1·00	1·00
Skilled manual	1·38	1·42	1·46	1·26	1·24	1·25	1·50	1·48	1·57	1·24
Clerks	1·40	1·60	1·50	1·00	1·00	1·00	2·10	1·60	1·80	1·50
Lower admin. and professional staff	2·40	2·70	2·80	1·50	1·50	1·40	...	...	...	2·00
Higher admin. and professional staff	4·90	5·40	5·50	2·10	2·00	1·80	3·20	2·30	2·40	7·00

---

[50] Social Indicators 1973, pp. 125, 146.

[51] Ibid., p. 161.

[52] Lebergott, op. cit., p. 526.

[53] United Nations, Economic Survey of Europe in 1965, Part II, Table 5.16. Reproduced in Frank Parkin, Class Inequality and Political Order, (St. Albans, UK: Paladin, 1972), p. 118.

Concerning benefits received in addition to direct compensation, for some decades, as the armed forces have been maintained at relatively high levels, it has become conventional to criticize the traditional "fringe benefits" associated (in conjunction with relatively low pay for many decades) with American military service--medical care, exchanges, vacations, retirement, etc. Among other features of convergence, it may be that the general American labor force may be achieving (or even exceeding) comparability with the military in this respect. (It appears relevant, as a 1964 study commented, that comparisons of the "fringe" liabilities of military and civilian service are seldom compared.) In any event, if benefits become comparable, or even disadvantageous to persons in military services, such changing conditions would affect not only the expectations of young persons who enter military service, but also the relative attraction of military service to the uncommitted, as well as the structure and procedures for distributing benefits within the armed forces.

A 1964 Department of Defense study reported that between 1947 and 1964, industry fringe benefits had nearly doubled as percent of payroll (from 15.5% to 28.8%) and, in the form of dollars expended per employee per year, tripled (from $496 to $1,725). This was compared to military percent of payroll, 27.9%, and dollars per employee, $1,410, for fringe benefits in the military (and 22.2% and $1,460, respectively, for civilian government workers).[54]

The following table[55] indicates the rapidity of expansion in recent years of benefits made available in the civilian economy. Far from halting in 1970, this trend continues, and in some factors, accelerates:

Benefits: Public and Private Workers Covered by Employee Plans, 1950-1970

	1950	1970
major medical	near 0%	37%
accidental death	16%	52%
regular medical	17%	72%
life insurance	40%	70%
surgical	35%	80%
hospitilization	49%	82%
retirement (private only)	23%	48%

[54]US Department of Defense, Study of Military Compensation: A Summary, Washington, October 1964, pp. 6-18, 6-20, 6-24.

[55]Social Indicators 1973, p. 127.

An analysis on behalf of the life insurance industry established that 31 percent of total compensation in private industry is now provided in the form of fringe benefits, and estimated that by 1985, the level will reach 50 percent of total compensation.[56]

Moreover, the same source reported the emergence of a trend toward greater flexibility within the total compensation package, permitting a number of options for individual choice, involving trade-offs within the total combined package among amount of salary, amount of life insurance, amount and type of group health insurance, amount and type of group legal insurance, length of vacation, and working hours.[57]

Professor Berkley notes several developments of general and specific relevance to grade creep. For example, the proportion of national income allocated to wages has increased steadily for the past 50 years, reaching 70 percent in the 1945-1963 period. The proportion of GNP for public goods has steadily risen from 7 percent in 1923 to almost 67 percent in 1970. In addition, public employment is rising faster than private employment (public employment is now 20 percent of the labor force).[58]

Jean Fourastié, in The Causes of Wealth comments on the long-time rise of real wages in Western countries in general; he cites the fact that in 1800, the Chief Justice of the Court of Accounts in France earned about 50 times as much as his office boy per hour of work; whereas, in 1948, he earned about 4 1/2 times as much.[59]

There is a discernible tendency for the managerial salary structure to flatten. As the proportion of professional employees increases in an organization, the gap narrows between managers' and employees' salaries, for professionals' salaries tend to be comparable to those of managers.[60] In this connection, it was confirmed to Congress that in 1972 the average annual salary among all GS-16's was within $2,000 of the average of all GS-18's.[61]

---

[56]Trend Report, No. 7, New York: Institute of Life Insurance, September 1973.

[57]Ibid.

[58]Berkley, op. cit., pp. 41-42.

[59]Jean Fourastié, The Causes of Wealth (Glencoe, Ill.: The Free Press, 1960), pp. 30-31.

[60]Berkley, op. cit., p. 42.

[61]1972 Hearings on the "Federal Executive Service," p. 12.

In general, like the environment cited by Fourastié, there is less disparity in salary in public employment than in private employment, where greater differentials still exist. For example, a top federal official may earn 5-6 times his secretary's salary; whereas in private industry, a top executive may be paid 50-60 times his secretary's salary.[62]

D. Supervisors and Executives.

Another approach to analyzing grade structure illustrates the complexity of supervision in modern contexts. One study undertook to determine the "dimensions of executive positions," and originally developed 659 items (later reduced to 575) describing such positions; 268 percent of the items identified "position activities," 217 items identified "concerns or responsibilities," 109 identified "demands or restrictions," and 74 "other characteristics." The study found three levels of management in five functional areas--research and development, sales, manufacturing, general administration, and industrial relations. Some 93 executives in 11 large corporations responded by checking one of 8 degrees to which each item applied to their positions. The results were inconclusive but significant in finding both substantial similarities and substantial dissimilarities among different types of business, different companies, different internal functions, different internal levels of management, different positions, and different points in time.[63] It seems a reasonable translation of these data to project them into the military establishment, which experiences difficulty (perhaps another near-unique characteristic) in devising one central grade and pay structure, despite considerable dissimilarities among substantially different functional areas within the military establishment.

These findings have significance in suggesting cautious selectivity in identifying similarities and dissimilarities, both internal and external, in linking substantially different major organizations, such as military and industrial hierarchies.

In 1954, the Bureau of Business Research reported on a survey[64] of 561 companies engaged in production of automotive parts; 313 companies responded to the survey. The authors distinguished

---

[62]Berkley, op. cit., p. 42.

[63]John K. Hemphill, Dimensions of Executive Positions, Research Monograph No. 98, Bureau of Business Research, (Columbus: Ohio State University, 1960).

[64]Baker, Alton W., and Davis, Ralph C., Ratios of Staff to Line Employees and Differentiation of Staff Functions, Bureau of Business Research, 1954.

between "supervisors," the first-level management employees over operatives, and "executives," the management employees above supervisors. Certain passages in the discussion of this single industry are of some interest to this paper, in contributing to verification that the "shape" of grade structures changes as organizations reach different levels of size:

> Over-all results of the study show that 8.6 percent of the 104,200 employees studied held managerial positions . . . It is quite apparent that the percentage of management personnel relative to total employees is marked by an inverse relationship up to the 5,000-employee level. For instance, in the companies employing up to 50 persons, approximately one out of every seven metallic automotive parts manufacturing employees holds a management position. This same approximate relationship prevails up to the 250-employee level. However, the percentage declines markedly as companies grow in size, at least to the 5,000-employee company where the average is one manager for approximately every 29 total employees. The two companies employing more than 5,000 employees average one manager for every 11 total employees and thus represent a distinct reversal of the inverse relationship trend. This would seem to indicate that as metallic automotive parts manufacturers grow very large they require both more executives and more supervisors in relation to their total work force.
>
> It can be seen that the proportion of executive personnel also declines as companies grow larger but that the trend again appears to reverse itself in the two companies which have more than 5,000 employees. This general inverse relationship is apparently the result of an ability to use executive personnel more effectively as companies increase in size.
>
> However, the proportion of supervisors seems to increase up to the 250-employee level and then to decrease slightly as companies grow to the point where they employ about 5,000 employees. Again, the trend changes upward in the two largest companies. All-in-all, the supervisory relationship is much more stable than that for executives. . .[65]

* * *

---

[65] Ibid., pp. 64-65.

> . . . As companies expand, demands for executive personnel obviously will increase in absolute amount but this change seems tc proceed at a much slower pace than the overall rate of growth of the metallic automotive parts manufacturers. In other words, there will be a smaller percentage in comparison to total employees. Thus executive training and development projects should take this trend into account. A word of caution is in order, however, since the relative demand for executives seems eventually to increase in the very largest of the companies surveyed. This could act as a limiting factor in expansion. It also seems to pose a greater need for the development of executives in very large metallic automotive parts manufacturing organizations.[66]

One other of the few available sources of data on this point reported[67] the growth of the relative numbers of foreman throughout the whole area of manufacturing employees in the American work force, as follows:

	1900	1940	1960
Number of foremen per 1,000 employees	2.4	2.76	4.23

Stanley Lebergott comments:

> The ratio of foremen to employees changed little from 1910 (perhaps from 1900) to 1940. But when unions began to spread in the late 1930's, and wage rates spiraled, a sharper cost consciousness was apparently generated. Supervision became markedly closer after 1940, the ratio of foremen to employees rising at five times the rate it did from 1910 to 1940.[68]

This pervasive change in American work organization since World War II seems relevant to changing patterns of grade structure in all major American work organizations, including the military.

---

[66] Ibid., p. 72.

[67] Stanley Lebergott, "Labor Force and Employment Trends," in Sheldon and Moore, op. cit., p. 112.

[68] Ibid.

E. Working Time.

Another area of significant change in the work force involves the daily and weekly spans of working time, and eventually the linkage between average working time and the number and status distribution of total-organization work force. The following general table[69] reflects changes in average weekly hours of work over the past three decades:

	All Workers Total Civilian Economy	Workers in Manufacturing Industries	Production and Non-Supervisory Workers in all non-agriculture
1942 (14 yrs. & over)	48 1/2	40 1/2	40 1/4
1972 (16 yrs. & over)	39 1/2	40 3/4	37 1/4

"Over the past decades, managers and professions have come to work increasingly long hours and more days per week. Meanwhile, labor has tended to work increasingly fewer hours and fewer days."[70]

In 1850, the average work week throughtout the United States labor force comprised 70 hours, and in 1900 it comprised 60 hours. Such averages held on in certain sectors of the economy, such as agriculture, until 1920 and later, and in fact, continue today in family farming and in certain sectors of professional life. The 6-day week (54 hours) was the standard in America for a long time, followed by a plateau at 5 1/5 days. By 1930, the overall average declined to 46 hours, and by 1950 to 40 hours,[71] where it has remained as the general standard.

The 5-day week first emerged in the United States about 1908, but by 1918 it was still used by only a handful of firms. As late as 1929, only 5 percent (comprising 500,000 workers) of the work force operated on a 5-day week basis. In 1929, the National Industrial Conference Board published The Five-Day Week in Manufacturing Industries, a book which generated as much controversy as the idea of the 4-day week generates in our time.[72] In 1926, the National Association of Manufacturers had published a Pocket Bul-

---

[69] Social Indicators 1973, p. 128.

[70] Poor, op. cit., p. 88. These passages are heavily indebted to Riva Poor.

[71] Ibid., p. 12.

[72] Ibid., p. 13.

letin entitled, "Will the 5-Day Week Become Universal? It Will Not!"[73]

So much for negative prophecy, for the 5-day week did become standard in America. It is interesting to note that most of Europe is still on the 6-day week; the USSR, however, recently dropped from 6 days to 5.[74]

Before we take up more details of the current dynamics related to the length of the work week, let us take note of a fundamental condition. We have already noted that in 1970 the American work force comprised about 86 million persons, averaging about 40 hours per week. It is of importance to note that at the rate of 50 hours per week, the same work could be accomplished by only about 69 million persons, leaving 17 million to swell the ranks of the unemployed. At 60 hours per week, the same work could be accomplished by some 57 million, leaving almost 30 million in unemployed status. Such a scale of unemployment would be simply intolerable in America. As Dennis Gabor remarked: "We can reduce the work week; we cannot face total unemployment for those rendered redundant by technological change."[75]

The two critical considerations, of course, will doubtless continue to be the total number of man hours worked by the labor force, and the productivity per man hour. As one looks toward the future, reflecting on the relationships among automation, productivity, the characteristics of the future work force, and changing American values, one may allow a certain amount of credibility to the possibility that one means of increasing the size of the work force would be to reduce the average work week, thus spreading work opportunity for an expanding work force. This brings us to consideration of the 4-day work week, at variable numbers of work hours per day; the most obvious initial level would be a 4-day, 9-hours per day, 36-hour work week.

Before considering the 4-day week, we should be aware that more advanced variations of the work week are being experimented with. For example, a number of firms are experimenting with "flexitime" and similar systems in which individuals choose working spans within allowable ranges or in which staggered work spans overlap.

---

[73] Ibid., p. 55.

[74] Ibid., p. 12.

[75] Dennis Gabor, "Material Development," in Junk and Galtung, op. cit., pp. 161-162.

Of course, a growing part of the labor force works part time in any number of variable arrangements; but we are not concerned here with other than full-time work spans.

One imaginative forecast of how far flexibility may pervade working life is provided by Patrick Golding:

> The problems posed by the revolt of the bored can only be met by large-scale change in the whole working situation. Not only must change be made a realistic option in the worker's life. There must be a change in the way society looks at work. It is time for the emergence of Multipurpose Man. Multipurpose Man is the worker with more than one skill, more than one working interest, more than one job. . . The worker with this new outlook believes that man is a many-sided, adaptable, questing and ingenious creature whom nature never intended to be shackled to one small and often insignificant task all his working life. . . . To achieve the variety and interest he needs in his working life, he will wish to create his own pattern of work, spending perhaps half the week on one job and half at a completely different one. He may want to change not only jobs but industries every few years. He may split the working week, or the working month, among three or four employers. . . . He will experiment, seek fresh work horizons, find out the employments that best suit his talents and his temperament, and mix his own particular work cocktail to suit his own individual taste.[76]

One inevitably wonders whether the Multipurpose Man described above will represent the prototype worker of the future, the average worker in a vast work force, or will he represent only an extreme, exceptional type exemplified by a restless minority?

In any event, some economists predict eventual wide acceptance of the 3-day week, pointing to its convenient feature of permitting two work forces per week in order to keep high-capital equipment in full operation. Over 100 firms are already experimenting with a 3-day week. One recently established employment agency in New York, Baeder and Torton, places permanent-salaried professionals, mostly women, in an arrangement it calls "Newtime," involving a 5-day, 25-hour week.[77]

---

[76]Patrick Golding: Multipurpose Man: A New Work Style for the Modern Age. (New York: Taplinger, 1974).

[77]Poor, op. cit., p. 121.

In any event, in reference to the 4-day week, such an arrangement has been in effect in a number of agencies for some years. The Reader's Digest organization, for example, for years has been on the 4-day, 35-hour week.[78] Drivers of fuel oil and gasoline delivery trucks for most major oil companies have been on the 4-day week for 30 years.[79]

Riva Poor, one of the most prominent specialists in study of the 4-day week, made an initial survey of firms in 1970 and located 39 firms in the United States using the 4-day, 40-hour week, including 5 firms which had tried it and abandoned it. A more comprehensive survey in 1972, however, identified 1,500 firms using the 4-day week.[80] It is particularly interesting to learn that in every case known to Riva Poor, it was not labor or middle management that initiated the adoption of the 4-day week, but top management (there is some belief that much of organized labor opposes the 4-day, 40-hour week, because it is looking beyond to a 4-day, 32-hour or 30-hour, week).[81] It is also relevant to note that the workers most frequently excluded even in "4-day firms" are salesmen, shipping and receiving, office workers, and managers.

The government apparently maintains a noncommittal stance toward the 4-day week. In the spring of 1971, the Civil Service Commission initiated a study of its possibilities in government service. One spokesman said:

> There is no thought of closing down government offices three days a week. The movement is in the other direction. We are thinking of trying to improve service, possibly with two shifts of workers to keep government offices open six days a week.[82]

---

[78] Ibid., p. 17.

[79] Ibid., p. 14.

[80] Ibid., pp. 11, 38-39.

[81] Ibid., p. 26.

[82] Helen B. Shaffer, "Four-day Week," Editorial Research Reports, Washington: Congressional Quarterly, Inc., August 11, 1971.

A number of other developments obviously affect the composition of the work force--age, compensation, geographical location, work hours, and many others. We have cited the powerful factor of reduction of the average work week. A related factor is the average span of working life, particularly as it is affected by retirement policies. We have already cited the declining proportion of men 65 and over who participate in the labor force, due to a number of changes such as the availability of social security benefits beginning at age 62.

While certain individuals resist early retirement, and while discrimination against older persons in hiring practices has become the subject of a few court actions, an increasing number of organizations have lowered their retirement ages for both forced and permissive retirement categories.

An Industrial Conference Board study reported that in recent years, 30 percent of 640 major manufacturing companies have liberalized their provision for early retirement.[83] Still, although the number of persons taking advantage of early retirement opportunities is on the increase, they remain a minority among the eligibles. According to another analyst, less than 25 percent of eligibles accept early retirement opportunities.[84]

The prevailing criteria for retirement in the general labor force are obviously related to retirement criteria in the armed forces. The singular requirement of the armed services for relatively youthful memberships have resulted in occasional criticism of military retirement systems; however, as time passes, convergence occurs between military and civilian systems--in retirement provisions, as well as in other respects.

Elsewhere in this study we have cited Peter Drucker's analysis to the effect that in 1939, hospitals employed an average of 3 workers per 10 patients and had low capital investment per patient, but that in 1970, hospitals employed up to 30 employees per 10 patients and had high capital investment.[85] This change exemplifies adjustment resulting from the shift to a service economy; for one aspect of disruption, it is inevitable that 30 workers will be distributed in a more complex grade structure than will 3 workers--another indicator of grade creep in the labor force at large.

---

[83]Elizabeth M. Fowler, "Personal Finance: Pension Study Finds Many Companies Providing Plans for Early Retirement," New York Times, Dec. 20, 1971.

[84]Eric Morgenthaler, "Hanging On: Most People Eligible for Early Retirement Prefer to Stay on Job," Wall Street Journal, July 17, 1970.

[85]Peter F. Drucker, "The Surprising Seventies," Harper's Magazine, July 1971.

F. Starting Salaries.

Another factor affecting grade structures is escalation in starting salaries. In the recent past, medical interns and new graduates of law schools, for example, were notoriously underpaid, with not much more than subsistence-level salaries. In the middle and late 1960's, sharpening competition among professions and industry, and other factors, combined to discard long-standing arrangements and sharply escalate starting salaries of medical and legal graduates. The same escalation has occured sooner or later in most fields.

In the military, pay raises have been sporadic. Before World War II, the pay of the bottom grade enlisted man stayed at $21 per month (less 15 percent during the Depression years in the mid-1930's) for many years. It was the outbreak of World War II and the drafting of millions of Americans into the armed forces that generated sufficient interest in armed forces pay to raise the private's emolument to $50. Since the Vietnam War, the desire to develop an all-volunteer force has pressed for raising the starting pay, the entering pay, in order to attract entrants, with the result that the current entering pay of the private has reached $326.10.

While retention of skilled personnel already in the Service, and (more recently) achieving some degree of parity with civilian pay for military persons in levels higher than entering level, have also become of concern to those responsible for authorizing military pay scales, concern for these aspects appears to have generally lagged behind concern for attracting entrants.

One must be aware, however, that the raising of entering salaries is itself a formidable generator of grade creep within any organization grade and salary structure. One pushes up from the bottom level, so that inevitably one generates pressure to maintain grade and pay differentials at all levels above the bottom.

It is interesting to examine the history[86] of changes in the monthly pay of the lowest paid American soldier:

---

[86]Figures up to 1946 from Army Almanac, Washington: USGPO, 1950, p. 693. Remaining figures from US Army Finance Office, Carlisle Barracks, Pa.

1785-1872 (87 years)	$ 4.00	
1872-1908 (36 years)	13.00	
1908-1917 (9 years)	15.00	
1917-1922 (5 years)	30.00	
1922-1942 (20 years)	21.00	(during the mid-1930's,
1942-1946 (4 years)	50.00	reduced by 15%)
1946-1958 (12 years)	75.00	
1958-1965 (7 years)	78.00	
1965-1966	87.00	
1966-1967	90.00	
1967-1968	95.70	
1968-1969	102.30	
1969-1970	115.20	
1970-1971	124.00	
1971-1972	134.40	
1972-Jan 1973	288.00	
Jan 1973-Oct 1973	307.20	
Oct 1973 to date	326.10	

This chart harbors certain significance. In the 9 years since 1965, starting pay has more than quadrupled. In the 2 years since 1972, it has more than doubled. There should be little mystery about one of the prime engines of distortion of the military grade structure over the past decade; whatever the rationale may be for this drastic escalation of starting salaries, it is inevitable that powerful effects will be felt on the entire military grade structure. No organizational structure exists, or can exist, that could escape powerful disturbance from such drastic escalation of entering compensation within a very compressed period of time.

Not unrelated to starting-salary escalation is escalation in the minimum wage. Raising the minimum wage benefits many workers, but concurrently also appears to eliminate a number of marginal jobs for marginal employees.[87] The effect with which we are more concerned here, however, is the relationship of additional increments of upward pressure generated by minimum wage statutes upon levels of wage structures above the minimum.[88]

---

[87]"Automation and Unemployment," op. cit., p. 20.

[88]Ibid.

G. Paraprofessionals.

Another phenomenon related to grade structures, divisions of labor, the knowledge explosion, increasing complexity of modern life in general, and encroachment of administration upon the work time of executives, specialists, and professionals is the emergence out of these dynamics of the assistant professional, the paraprofessional.

In more and more professions and specialties, demands for intermediate, non-specialized work, (illustrated in an oversimplified way by growing demands to "fill in all the necessary forms") have generated a role for an assistant who need not be as well educated or experienced as a principal, and who may be prevented by legal statutes or other constraints from performing certain functions, but who can perform less-important but time-consuming essential tasks that are accumulating in almost every professional, specialist, and executive position.

The volunteer has a long history in America, from the Minutemen of Revolutionary times to the volunteer firemen who still respond to the bells in many communities today. Hospitals have long utilized the voluntary services of many persons, mostly women at all ages, performing a variety of administrative and auxiliary chores--teen-age "candy stripers," nurses' aides, recreation and library workers, etc. Schools have made increasing use of teachers' aides for various aspects of administration, marking of papers, etc. Increasingly, police departments are making use of various forms of volunteer police aides. Medical specialists are increasingly interested in the availability of physicians' aides, particularly among the corpsmen and medical technicians trained by the armed forces.

Sarah Splaver in her recent book, Paraprofessions, gives an eye-opening analysis of the growing dimensions of this development.

> During the 1950s and then even more intensely during the 1960s, it became apparent that in profession after profession there were not enough professionals to meet the increasing needs for their services. Something had to be done to relieve this manpower shortage. As a consequence, the paraprofessions were born.
>
> Some paraprofessions, such as the engineering paraprofessions, are in a healthy, thriving adolescence and already have hundreds of thousands of members. Others, such as the legal and medical paraprofessions, are still in their infancy and have but a limited number of members

at present. Others have not yet been born; in many professions the members have begun to talk of the need for paraprofessional assistance, but the talk has yet to be converted into action.[89]

. . . Of all the professions, teaching has the largest number of members. At the start of the 1970's, there were approximately 2,200,000 full-time teachers in the elementary, middle, and secondary schools in the United States.[90]

The teacher aides of the 1950s and early 1960s so effectively demonstrated their worth that, as a result, in the mid-1960s the Federal Government began to provide funds to enable the public schools throughout the country to hire more teacher aides. Consequently, approximately 30,000 full-time teacher aides were employed in our nation's public schools during the 1966-67 school year with funds provided by Title I of the Elementary and Secondary Education Act of 1965. In the Spring of 1968, there were about 58,000 teacher aides at work in the public schools.

At the start of the 1970s, it was estimated that there were more than 200,000 teacher aides. . .[91]

According to an estimate made by the National Congress of Parents and Teachers, more than a million paraprofessionals will be working in the schools by 1970.[92]

. . . There were about 275,000 lawyers at work in the United States at the beginning of the 1970s; more than 75 percent of them were in private practice. Legal services are in such great demand that not only could the vast majority of lawyers use paraprofessional assistance, but many lawyers could individually well utilize the services of more than one legal assistant . . .

---

[89]Sarah Splaver, The Paraprofessions (New York: Julian Messner, 1972), p. 15.

[90]Ibid., p. 51.

[91]Ibid., p. 41.

[92]Ibid., p. 51.

> The career of the legal assistant is a brand-new career opportunity, truly born at the start of the 1970s with the establishment of the two-year associate degree programs at Los Angeles City College and Cumberland County Community College. It is an infant career that, all signs indicate, will grow rapidly into a sturdy adulthood.[93]
>
> . . . In 1968 there were approximately 70,000 library paraprofessionals at work throughout the nation.[94]

The phenomenon of paraprofessionals appears destined to become a major element of the changing American labor force, particularly as the job force expands, seeking to fill the gap below the increasing demands for professionals and specialists. This development, too, will have significance for grade structures in large organizations.

H. Automation.

Perhaps the most pervasive effects upon the labor force will be achieved by the comprehensive force of automation. Secretary of Labor Willard Wirtz in 1964 described the impact of automation upon the worker, management, and the public in these strong terms:

> The most dangerous myth, in immediate terms, is that machines produce as many jobs for men as they destroy and therefore represent no threat to workers. This is half-truth and therefore a half-lie. The truth is that machines permit the extension of men's work activities. The implied lie is that this will happen automatically or without the exercise of full human responsibility.
>
> The machines now have, in general, a high school education--in the sense that they can do most jobs that a high school education qualifies people to do. So machines will get the unskilled jobs, because they work for less than living wages. Machines are, in the most real sense, responsible for putting uneducated people out of work.
>
> The jobs the machines create, furthermore, are usually for different people from those they displace. This doesn't matter if labor is viewed as a commodity. What it means, however, in more understanding terms is that the bargain a machine strikes with a man is that it takes

---

[93] Ibid., p. 107.

[94] Ibid., p. 116.

> one job and offers in return another--stripped of the worker's seniority, accrued vacation benefits, pension rights, and the value of the skill he had spent a lifetime developing.[95]

Virgil Rogers, of the national Education Association, adds a compelling comment:

> Today, machines provide the equivalent of about 30 slaves for each of us every day, while millions of Americans live in misery, squalor, and disease, and without hope of finding the means of earning a living for the family; this means that we have cause for critically examing automation, education, and work.[96]

Automation looms as a critical element in more effective organization. With increasing development, more decision functions are being based on computers. Even financial success may depend upon the brilliance and imagination of the humans who program the computer. In the sense that knowledge is power, and communications means access to power, some claim that in 2000 the highest-paid worker in the world may be a computer programmer.[97]

Professor Donald Michael predicts:

> There is every reason to believe that within the next two decades machines will be available outside the laboratory that will do a credible job of original thinking, certainly as good thinking as that expected of most middle-level people who are supposed to use their minds. Where does that leave the man in the middle management job? We assume he will go up because at any lower stage of economic activity, his efforts no longer have any value.

---

[95]Address to midyear class, University of Michigan, Ann Arbor. Quoted in AFL-CIO News, Jan.18, 1964, p. 4. Quoted by Virgil M. Rogers, of the National Education Association, "Education and the World of Work," in Brickman and Lehrer, op. cit., pp. 264-265.

[96]Ibid.

[97]Paul Baran, "On the Impact of the New Communications Media Upon Social Values," Paper for Symposium on Communications, Law and Contemporary Problems, Part I (Durham, NC: Duke University School of Law, Duke University Press, 1969).

> There's a growing awareness that the advent of the computer means more work for the manager, not less. It should expand the manager's responsibility, rather than shrink it. The quality of judgement, which the computer can't supply, will be even more urgently needed.
>
> It will create the need for a new position for which the training will be strict and highly technical. It will require a new synthesis of studies.[98]

The statistics on computer distribution within the next few years are impressive. (Brzezinski notes that steel production used to be an index of power comparison between nations; now computers serve the same purpose.) This was the worldwide distribution at the end of 1969:[99]

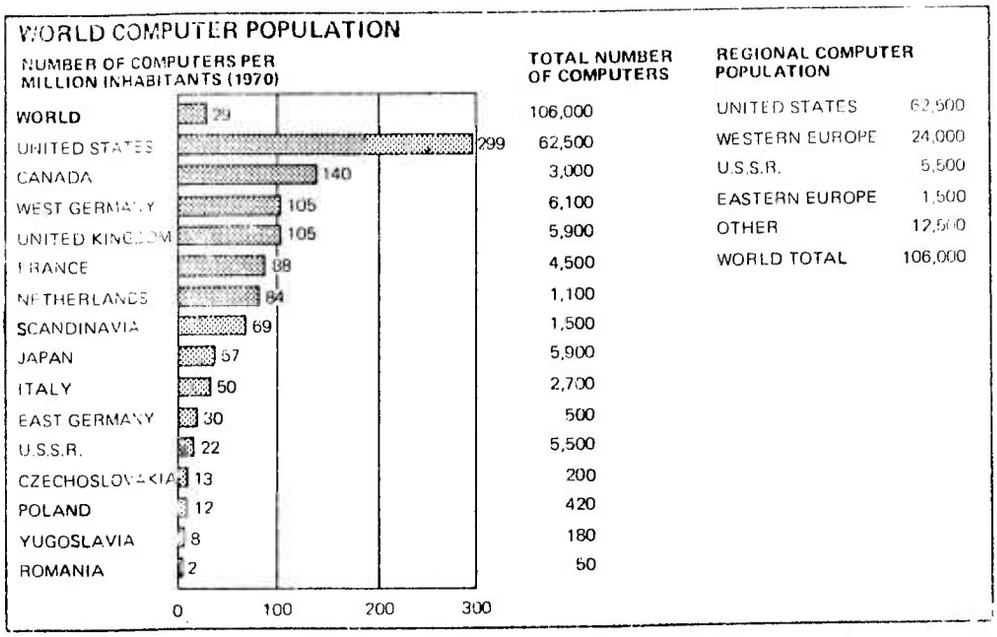
United States	70,000
Japan	5,800
West Germany	5,750
Britain	5,600
France	5,010
USSR	3,500
Italy	2,500
Canada	2,400
Australia	900
Netherlands	850
Switzerland	800
Eastern Europe	750
Africa	750

---

[98] Michael, op. cit.

[99] Zbigniew Brzezinski, "America and Europe," Foreign Affairs, Oct. 1970, pp. 11-30.

Another view[100] of the computer population is provided by Professor McHale:



Computer growth during the ten years up to 1966 was almost incredible. In just ten years, the typical electronic data processor became ten times smaller, 100 times faster, and 1,000 times less expensive to operate. These trends will continue; and our national computing power, which is doubling every year, will soon be sufficient to make the computer a genuinely universal tool. In 1956 there were fewer than 1,000 computers in the United States; in 1967 there were 30,000 or more than $11 billion worth; and by 1976, the machine population may reach 100,000. And these figures will, of course, be comparably increased through the growth of data processing in other nations.

---

[100]John McHale, World Facts and Trends, 2d ed., (New York: Collier Books, 1972), p. 56.

In 1957, our machines were capable of 12 billion computations per hour; in 1967, their capability exceeded 20 trillion per hour; and by 1976, they will attain 400 trillion, or about 2 billion computations per hour for every man, woman, and child.[101]

The Institute for the Future estimates that the number of computers in use may reach 500,000 by 1985. The Institute foresees a rising need to study in advance the resulting social impacts, such as the concentration of financial and political power in the hands of the relatively few who control computers or access to them.[102]

Many accounts are available of the displacement of live workers by automation. Bernard Karsh cites a number of such observations: on a production line turning out 1,000 radios a day, two workers now produce more than 200 workers did in pre-automated systems. Formerly, it took 400 workers 40 minutes to turn out one auto-engine block; now, in the automated plant, 48 workers turn out an engine block in less than 20 minutes. Today, 14 glass-blowing machines, each operated by one worker, produce 90 percent of all the glass light bulbs used in the United States and all the glass tubes (except picture tubes) used in radio and television sets.[103]

The social implications of Dennis Gabor's comment (also cited in the section on meritocracy) are pertinent here:

> By the logic of machines, the IQ bracket 75-100 has no place in modern factories (those below 75 can still be employed as sweepers; it is not worthwhile to replace them by machines). Soon the computers will make it economical to replace many clerical workers in the office with IQ's of 100-115.[104]

---

[101]"Automation: Life With a Little Black Box," Kaiser Aluminum News Special, No. 4, 1966.

[102]Report, The Institute for the Future, Menlo Park, Calif. Cited in Behavior Today, June 17, 1974, p. 174.

[103]Bernard R. Karsh, "The Meaning of Work in An Age of Automation," Current Economic Comment, August 1957, p. 10.

[104]Gabor, op. cit., p. 162.

The worker end of the problem is important; so also is the investment problem. In 1860, it cost $500 to create one new job; in 1963, it costs $25,000. In the automated future, it may cost $100,000.[105]

These warnings may send a chill down the backs of those concerned that this good society will provide full employment in the future.[106]

A middle management survey was conducted among some thirty major organizations in America, including Corning Glass, General Electric, DuPont, Chase Manhattan Bank, Gulf Oil, IBM, International Paper, International Shoe, Lockheed, Metropolitan Life Insurance, RCA, Standard Oil, US Department of Labor, US Civil Service Commission, the Veterans Administration, Carnegie Tech, and the University of Chicago. The following conclusions were reached:

> For purposes of this report, it is assumed that middle management is that group of employees above first-level supervision who either make day-to-day operating decisions in the conduct of a business enterprise or who directly contribute judgements, information, and analysis to the process of decision.[107]
>
> The exact number of Americans employed in middle management, and thus defined, is not available. Government sources have indicated that, in 1964, there were 4.3 million salaried managers and officials employed in the United States. There were approximately 8.5 million professional, technical and kindred workers, of whom a substantial proportion doubtless are serving business and industry in decisionmaking or directly accessory capacities. It is not unreasonable to assume, therefore, that at least 5 million persons are middle managers within the scope of this report.[108]

---

[105]"The Moment of Truth on Automation is Coming," Newsletter, Washington: Research Institute of America, Dec. 27, 1963, p. 2.

[106]Especially in relation to the American economy, the point is illustrated in an anecdote, source unknown, of some years ago, concerning Walter Reuther. During a tour of an auto plant, officials seemed pleased to point out to Reuther how planned automation would eliminate legions of workers and diminish Reuther's constituency. In response, Reuther asked the $64,000 question: "If and when that day comes, gentlemen, who will buy your automobiles?"

[107]"Automation and the Middle Manager," New York: American Foundation on Automation and Unemployment, 1966, p. 5.

[108]Ibid.

The following passages from the same survey provide illumination on the effects of automation on middle management:

> There is uncertainty among various companies' spokesmen about the trend toward displacement, both as to time and degree.
>
> The dominant view, nevertheless, foresees drastic changes in the demand for middle management, as well as in the content of their work. . . .
>
> Most spokesmen were disturbed and restless, however, complaining that . . . the ranks of middle management will become substantially thinner and their work materially different in the future. They foresee the big change during the next ten years, though some predict a sooner or later date.
>
> Max H. Braun, Vice-President and Secretary of Helene Curtis Industries, Inc., contends that there is a "definite trend toward the displacement of middle managers," since it is now possible with centralization of information and analysis to schedule at least a 15 percent reduction in his company's middle-management group. . . .[109]
>
> When the machine takes over the repetitive type of work--the sifting, grading and evaluation of problems--and throws out "exception data" for action by a small, highly skilled group, middle managers who formerly were immersed in routine "probably won't exist if the machine is doing that work for them," says Mr. Baxter of Gulf Oil Corporation.
>
> If the computer were allowed to roam at will, John E. Hines, Manufacturing Systems Consultant for Internal Automation Operations at General Electric Company, claims that his company's Management Levels 5 and 6 (foremen and general foremen) could be wiped out. "There is where the real volume of people to be eliminated and the real opportunities are," he says. For a production force of 1,000 there may now be 500 management personnel in a given plant; with proper use of computers, Mr. Hines believes 50 to 100 managers would suffice, and even those remaining would have little to do but "watch out for safety and, if a worker's wife dies, go to the wake and send flowers." Joseph C. Hayes, Senior ADP Analyst in the Information Systems Design and Control Branch of the Management Information Division of the Office of Naval Material, cites a similarly bleak example, where previously

---

[109] Ibid., p. 8.

one middle manager could supervise only 300 inventory items used in the Navy's far-flung activities, but now can keep his eye on 12,000. . . .

Leonard F. Vogt, Assistant Comptroller of International Shoe Company, insists, "In my opinion 80 percent of middle-management decisions ultimately will be computer-made."[110]

. . . there is near-unanimous agreement among the company spokesmen interviewed that:

1. There will be a drastic change in the job content of the middle manager: The repetitive tasks will vanish and he will be confronted with a greater variety of information, requiring more rigorous analysis in decisionmaking. Although his job will be more intellectually demanding, he will find more freedom, more flexibility, and more creativity in it.

2. Middle managers of the future will not be chosen solely from the ranks of computer specialists; among those who remain, there will be a premium on the traditional virtues of leadership, ability to make critical judgments, courage and vision.

3. The corporate structure will contain fewer levels of management responsibility. There will be a greater degree of centralization in the information-gathering, but not necessarily in the decision-making process.

4. Resistance to change by middle managers and hostility between them and computer specialists, though a frequent and sometimes frustrating component of the installation of machine systems, can be minimized by careful top-management planning.

5. There is as yet no radical change in the hiring patterns of middle management: the business administration graduate is still favored over the pure technician, although business-oriented trainees now have had more exposure to scientific disciplines than in the past.

---

[110] Ibid., p. 9.

6. The companies surveyed have not introduced, in connection with computerization, programs to retain and upgrade the skills of their middle managers despite their obvious need. . . .

7. American colleges and universities must update and broaden their curricula to meet the future managerial needs of industry. Business schools are under heavy attack for failing to offer either (1) sufficient technology or (2) insight into the practical problems of operating an enterprise. But companies are hardly in a position to complain in view of their own training deficiences.

The fact is that most managements are not yet prepared for the computer and, in part as a result, the computer has not advanced significantly in the area of middle management. Now is the time for intelligent preparation for the human problems which have delayed the use of the computer and will undoubtedly intensify in the future, for surely the computer will move relentlessly forward as competition and new technology forces its use.[111]

One in a series of University of Colorado studies investigated the organizational implications of automation, and developed several interesting responses:

Most authorities agree that industry will experience organizational changes as a result of increased automation. Since the integration of processes and machinery will be so extensive that a breakdown at any point will affect an entire factory, there is an obvious need for more maintenance technicians. At the General Electric motor plant in Schenectady, New York, the ratio of maintenance personnel to direct workers has risen from 1 to 16 to 1 to 8.[112]

---

[111] Ibid., pp. 40-41.

[112] Otis Lipstrev and Kenneth A. Reed, Transition to Automation, No. 1, University of Colorado "Series in Business," Boulder, Colo.: University of Colorado Press, 1964, p. 51.

The following tabulation[113] shows responses to certain statements among two groups of automated plants, one group (79) with low automation and one group (131) with high automation:

Statement	Low Automation		High Automation	
	Agree	Disagree	Agree	Disagree
Automation reduces the number of supervisory levels.	32%	46%	31%	55%
Automation increases the amount of supervisory responsibility.	75%	21%	76%	14%
Automation increases interdependence of work between supervisors at the same level.	53%	19%	62%	23%
Automation increases ratio of supervision to workers.	73%	22%	76%	14%
Automation requires supervisors to possess more technical skills.	90%	6%	88%	12%
Automation requires a more technically educated machine worker.	57%	35%	59%	34%
Automation makes supervisory human relations skills less important.	8%	86%	5%	92%

It appears valuable in this context to cite a perception of automation from inside organized labor. The following view[114] was expressed in 1966 by Mr. Walter Davis, who was concerned with AFL-CIO interests in education:

> Whether the great fear of automation that exists among workers is justified is not really important. The fact is that the fear is very real--whether caused by automation, cybernation, technological change, or other factors.

---

[113] Ibid., pp. 51-56.

[114] Walter Davis, "A Labor View of the Social and Educational Implications of Technological Change," in Brickman and Lehrer, op. cit., pp. 230-232.

There is very great argument and loud disagreement as to how imminent is automation and cybernation, which completely will revolutionize our society. In reading only a fraction of the literature on the subject, I have changed my views considerably. I am forced to agree that there will be a real limitation because of the vast amounts of capital needed to convert to either automation or cybernation. What is important is that the revolution is coming, and the key is: how are we going to handle it?

Like many people, I have taken refuge in the notion that the advance of technology always provides more jobs than are eliminated. However, I simply do not believe that any more. And it is interesting to note that John I. Snyder, Jr., president of US Industries, which produces automated equipment, agrees that this notion is archaic. In fact, he lists five fallacies that have concealed the shattering impact on automation.

Fallacy Number One: Automation is not really going to eliminate many jobs. Fact: Already it is gobbling them up at the rate of 40,000 per week. (This is a high figure; the variation is from 20,000 to 40,000 per week.)

Fallacy Number Two: Automation will create new jobs in the building, running, maintenance of new machines. Fact: In the building of them, maybe. But if it took a big battery of men to run and maintain them, why automate?

Fallacy Number Three: Those displaced can be retrained rapidly and immediately in other jobs. Fact: By present techniques, many workers simply are not retrainable.

Fallacy Number Four: Workers displaced in one area can be assimilated easily somewhere else. Fact: Those who lost their jobs are usually the ones least able to move in the first place.

Fallacy Number Five: There is no relationship between the automation revolution and the Negro revolution. Fact: Actually, the technological upheaval has intensified the drive for civil rights because the Negro, always the last hired and first fired, is suffering the most from unemployment.

Against this background, time becomes a desperately important factor. How fast are all of these vast changes likely to take place? J. Robert Oppenheimer judges that our scientific knowledge doubles approximately every eight years. Gerald Piel, the publisher of Scientific American,

points out that "the displacement of workers in both white-collar and blue-collar functions is proceeding at an exponential rate, that is, proceeding as the square of time."

The real test, then, is how fast our economic, social, and educational complexes can face up to the infinite changes posed by automation and cybernation. We must decide whether we are willing to abandon the pious platitude that, if a man wants to work, he can always find work. It seems to me that this notion played a rather central role in the Presidential election of 1964. The other alternative is a position enunciated by Mr. Piel, who says, "The human muscle began to be disengaged from the productive process at least a hundred years ago. Now the human nervous system is being disengaged." Many of us shudder at the notion that machines can make more sensible decisions than human beings. The notion is so awesome for many people that they simply reject it totally.

Economist Robert Theobald sums up the nature of the problem in this simple prose:

> The difference between the industrial age of the nineteenth and the first half of the 20th centuries and the cybernated age today is that the first combined human skill and machine skill and the second combines machine skill and machine power. The human being has been pushed right out of the productive process. It is a question of how long it will take us to realize he has been pushed out.

CHAPTER VI

INSTITUTIONS, ORGANIZATIONS, AND MANAGEMENT

> No established institution in our society now perceives itself as adequate to the challenges that face it.[1]

In earlier chapters we have considered a number of identifiable social and cultural trends which appear likely to produce impacts upon the ways in which major social institutions, including the military establishment, develop structures for distribution of responsibilities, labor, status, and rewards. A number of such trends are difficult to trace within such an amorphous context as American society. We have also identified a number of relevant trends in the American work force, a context only less amorphous than society as a whole.

At this point, we turn to the more definitive context of institutions and organizations, within which more direct linkage may be discerned between the dynamics in progress and grade creep, within the terms of this paper.

A. Stratification.

As we have already observed, knowledge is proliferating. Human affairs are becoming more complex. To be sure, human affairs have always been complex; but proliferating knowledge has made us more intensely aware of the fact. Empirical data are indispensable; but methodological analysis of data, and even more, theoretical formulations, are also becoming essential in understanding the structures and dynamics of social forces.

We have not included much reference to theoretical underpinnings so far in this paper; but as we take up the functional area of organizations, we believe it to be helpful to make a modest foray[2] into the enormous amount of relevant scholarly

---

[1]Donald A. Schon. Beyond the Stable State (Harmondsworth, United Kingdom: Penguin Books, Ltd., 1971), p. 16 (italics in original).

[2]The bibliography section includes additional references to social structures, stratification, and mobility. These aspects do not cover the entire complex subject, of course. One notable compendium, used extensively here is Neil J. Smelser and Seymour Martin Lipset. Social Structure and Mobility in Economic Development. (Chicago: Aldine Publishing Company, 1966).

work that has already been accomplished, in order to underline the argument that major social institutions are not autonomous structures within the social landscape, but are subject to common (including even historical) forces and patterns of human interaction such as occur in all other social institutions and, especially, as occur in the dynamic social arena.

Only a few selected theoretical highlights are mentioned here, followed by a return to the prevailing general approach of this paper, in reporting on developments relevant to the sharpening challenge to organizations to adjust to the evolving social context.

In the course of analyzing the complex relationships among economic development, social structures, and social mobility, Smelser and Lipset helpfully illuminated social structures, the dynamics of change in social structures, traditional stratification, modern stratification, trends in occupational stratification, and social mobility--viz, the movements of persons, either as individuals or as groups, through social structures. They described the factors involved, such as "directional tendencies" (the economic, political, and integrative functions, and the interplay of cultural values); resources (land, labor, capital, organization, levels of literacy, level of skills and training, physical fitness, and availability of information); roles,not persons, as basic units of social structure (that is, roles as citizen, husband, church member; and roles of formal, informal, and diffuse collectivities, from corporations and military establishments to ethnic groupings); and the three important regulatory concepts for social structures, namely, values, which legitimize beliefs; norms, which govern behavior; and sanctions, which identify rewards and deprivations.[3]

Stratification can be defined simply as the differential distribution of sanctions among the roles in a set of social structures; stratification occurs simultaneously in complex societies in various ways--through stratification of roles, organizations, individual persons, and classes. Change occurs when sanctions are redistributed, roles are reorganized, or new systems of stratification are introduced. The less differentiation exists in a society's structure, the more difficulty an individual has in achieving mobility through that structure.[4]

---

[3] Ibid., pp. 1-5.

[4] Ibid., pp. 6-11.

Professors Lipset and Bendix observe familiar distinctions that examplify stratification in the real world: most male non-manual occupations require more education and have more prestige than most manual occupations, even skilled ones; white-collar positions generally lead to higher incomes than manual occupations; and holders of non-manual positions (even low-paid white-collar workers) are more likely than manual workers to regard themselves as members of the middle class.[5]

In a related analysis, Harold Wilensky provides another generalization that goes to the heart of the subject of this paper: "The channels for mobility are multiplying as modernizing societies develop and as rich countries become richer."[6]

In a discussion of social discontinuity (constraints on mobility), Dr. Wilensky provides an instructive illustration that may foreshadow the future interactions between the internal structures of a large organization and the context of broader, less orderly social structure in which it operates, warranting extended quotation:

> . . . organizational contexts shape both the rate and severity of social discontinuity and the reactions to it. Consider the mobility of managers, engineers, and scientists in research and development in the IBM Corporation, epitome of the large, complex, growing enterprise based on sophisticated technology. Intense competition between individuals, small teams, projects, and departments is the mode; job reassignments are frequent and universal; much of the mobility is unpredictable and at first blush even chaotic. A man's project can be cancelled, shelved, or cut back; his unit abolished, taken off the project, reduced in force; he can be transferred to another unit or his unit head can be replaced by someone hostile to him or his specialty; his unit can be transferred to a different department or division where there is no place for his

---

[5]Seymour Martin Lipset and Reinhard Bendix. Social Mobility in Industrial Society (Berkeley: University of California Press, 1959), pp. 14-15.

[6]Harold L. Wilensky, "Measures and Effects of Social Mobility," in Smelser and Lipset, op. cit., p. 129.

particular skills and experience. Despite keen competition, despite an extraordinary amount of moving about, IBM and similar corporations are able to foster rugged individualism and yet minimize the usual chaos in the lives of the competitors. When everyone is rootless, the sting of sudden loss of status is lessened and timetables of progress are rendered comfortably ambiguous. More important is a favorable structure of opportunity; a multi-unit, science-based corporation characterized by growth at once diversified, swift, and stable, requires a labor force heavily recruited from upper and lower middle-class and upper working-class occupations. For men with high ambition such a context provides plenty of room at the top; for those who do not arrive it assures many horizontal transfers or, at worst, many ups and downs within a narrow but rewarding range. A further force for steady growth emerges in the case of IBM: construction, maintenance, and service work is contracted out wherever possible; the brunt of recessional and seasonal fluctuations is thus taken by subcontractors. All this makes a "no lay-off" policy practical; hardly anyone is ever fired, few are clearly "demoted."

If we view many such structures from the perspective of the whole economy, we see that the "negative" personal and political effects of discontinuous mobility are concentrated in the less-trained strata on the fringe of modern developments (e.g., the lower working class) and among the subcontractors and their employees. For the rest of the population, especially those in the giant establishments dominating growing industries (e.g., education, electronic data processing equipment), the institutional cushions are numerous and effective.

Such devices as contracting out work that is unstable and alienating, banishing a man to the "sticks" or "kicking" him "upstairs," even such trivial tactics as the ceremonial dinner or exit interview to ease the passage up or out--these obviously vary in availability and institutionalization. In comparative studies of mobility effects we must not only specify and elaborate the

> content of "irregular" or "discontinuous" mobility and attend to the larger economic and political context; we must also examine the ways in which various types of organizations handle the discontinuities they create.[7]

In another closely related discussion, Wilbert E. Moore identifies three powerful modern factors affecting structures of occupations: specialization, in subdividing complex skills, in multiplying the kinds and levels of skills needed, and in introducing new skills arising from the expansion of knowledge; bureaucratization, intensifying organization of large complexes of occupation; and upgrading, that is, long-term shifts to higher-skill categories, possibly accompanied by higher minimum-skill levels.[8]

Professor Moore's extensive studies have persuaded him of a historic trend in upgrading occupational distribution; that economic growth appears to be accomplished, in non-agricultural occupations, by a long-term shift from manual to non-manual occupations; and that, generally speaking, occupations classified as non-manual require somewhat higher educational levels and receive higher incomes. He suggests that more particular attention be paid, in the study of structural change involved in economic activity, to upgrading. "Whether the process can go indefinitely," he suggests, "and at what costs for those left behind in the process, are theoretically interesting and practically significant questions."[9]

One attempt to identify factors generating structural change, and to place them in some order of importance, from more important to less important, confirms the emphasis in this paper on the necessity to explore a broad social context in the evolution of structures in major social institutions. Harry Johnson has listed such factors in this order (only the most and least important are cited here) underlining the primacy of influence attributable to broad factors over clusters of individual characteristics; in other words, this suggests that such a structural dynamic as grade creep can hardly be understood as a phenomenon peculiar to a single, isolated organization within a complex social context:

---

[7]Ibid., pp. 127-129.

[8]Wilbert E. Moore, "Changes in Occupational Structures," in Smelser and Lipset, op. cit., p. 197.

[9]Ibid., pp. 206-207, 212.

Most important	Change in social values
	Institutional change
	Change in distribution of awards
	* * * *
Less important	Changes in personnel
	Changes in abilities and attitudes of personnel.[10]

A number of supplementary approaches are available for further illumination of that critical element of grade structure, stratification, such as an approach to stratification via the revealing concept of class. For discussion of that concept, we rely substantially upon the work of W. Lloyd Warner and his associates.

Warner quotes the eminent Harvard sociologist, Pitirim Sorokin, on the historical persistence of stratification:

> Any organized social group is always a stratified social body. There has not been and does not exist any permanent social group which is "flat," and in which all members are equal. Unstratified society, with a real equality of its members, is a myth which has never been realized in the history of mankind.[11]

Statuses function in order to coordinate the multiple activities involved in the control of each particular environment. Statuses result in the allocation of social tasks and the social location of activities; they include and exclude certain members of the society while placing all of them within a social universe. Statuses directly involve integral power and prestige, and the members of the society adapt as they feel their beneficial or harmful effects. Those with a high degree of adaptive control are likely to have high ranking; those believed to exercise low

---

[10]Harry M. Johnson, Sociology: A Systematic Introduction (New York: Harcourt, Brace & World, 1960), pp. 626-631, cited by Natalie Ragoff Ramsay, "Changes in Rates and Forms of Mobility," in Smelser and Lipset, op. cit., footnote, p. 214.

[11]Warner, et al, op. cit., p. 255. See also pp, 9, 34-44, 267.

control are often given lower ranking. As the division of labor increases and social units become more numerous and diverse, the need for coordination and integration also increases; when these needs are satisfied, the larger group is enabled to survive and develop.

Economic and technological factors are of fundamental importance in the determination of class and status orders; however, the social system, with its beliefs, values, and rules that govern human behavior, will probably determine what kind of technology and what kind of economic institutions will survive, wax, or wane in any given social entity. In any case, social complexity, necessary for economic advancement, is a basic factor determining the presence or absence of class.

Despite occasional beliefs that the United States (or any other society) is classless, social class in the United States is a major determinant of individual decisions and social actions; every major area of American life is directly and indirectly influenced by our class order. Major decisions of most individuals are at least partly controlled by aspects of class.

To belong to a particular level in the social-class system of America means that a family or individual has gained acceptance as an equal by those who belong in the class. Behavior in this class and the participation of those in it must be rated by the rest of the community as being at a particular place in the social scale. The mere possession of money is insufficient for gaining and keeping a higher social position; there must be social acceptance.

Warner's method of measuring social class and the class position of an individual involves, first, Evaluated Participation, which is based on the propositions that those who interact in the social system of a community evaluate the participation of those around them, that the place where an individual participates is evaluated, and that the members of the community are explicity or implicitly aware of the ranking and translate their evaluations of such social participation into social-class ratings that can be communicated. The second element of Warner's system of measurements involves an Index of Status Characteristics, comprising such factors as occupation, source of income, house type, and dwelling area.

Studies of the personalities of workers and managers demonstrate clearly that the effects of social class and mobility drives are discernible and demonstrably a part of the personality of individuals. Class is vitally significant in marriage and training children as well as in most social activities of a community. Status plays a decisive role in the formation of

personality of the various states of development; for if young people are to learn to live adaptively as mature people in our society, they must be trained even by informal controls to fit into their "places."

As noted earlier, education is now competing with economic mobility as the principal route to success. Kenneth Boulding offers this comment:

> The American educational system in the past has been quite successful in preparing people to be middle class to the point indeed where middle class values permeate perhaps 80 percent of our population. The system has not succeeded in preparing people to live useful and cheerful lives at the lower end of the income scale, mainly because educators are themselves middle class and hence unsympathetic to the values of a lower-class culture.[12]

Lest anyone persist in a delusion that unstratified societies exist east of the Iron Curtain, the following table should help to dispel that delusion. This chart[13] uses an index of 100 for the income of manual workers, and shows income differentials of occupational categories in industry, Eastern Europe, 1964:

	Bulgaria	Hungary	Czecho-slavakia	USSR
Manual workers	100.0	100.0	100.0	100.0
Clerical and admin. staff	98.5	95.6	105.4	84.0
Engineering and technical staff	142.8	153.3	130.3	144.0

Using the same index of 100 for earnings of unskilled workers, the following chart[14] shows income differentials in Yugoslavia over the ten-year period from 1951-1961, illustrating, in the process, "grade creep," (and perhaps inflation, as well) even in "Socialist countries":

---

[12]Boulder, op. cit., p. 212.

[13]United Nations, Economic Survey of Europe in 1965, Part II, Table 8.18. Reproduced in Parkin, op. cit., p. 144.

[14]Ibid., Part II, Ch. 12, Table 12.8. Reproduced in Parkin, op. cit., p. 173.

	1951	1954	1957	1959	1961
White Collar					
Highly qualified	125	238	290	316	333
Qualified		155	170	186	190
Unqualified	101	123	119	132	135
Blue Collar					
Highly skilled	120	205	223	243	249
Skilled		146	149	159	160
Semi-skilled	105	118	117	125	124
Unskilled	100	100	100	100	100

The foregoing observations on stratification by outstanding theorists interact with, and reinforce, a number of important assessments which we have already encountered in earlier sections of this paper, concerning change in the work force, social institutions, and society as a whole.

B. Bureaucracies.

We now turn directly to the subject of organizations on a more pragmatic level, and to a number of significant appraisals of what is happening in and to bureaucracies within current social dynamics.

Perhaps the most difficult question of modern times, suggested by John F. Kennedy, is how to manage an industrial society.

At a conference at Syracuse University in 1968, Dwight Waldo, the "grand old man" of American public administration, spoke on bureaucracy; he stated that there was a growing consensus that old bureaucratic ideals had outlived their usefulness.[15] The trend toward re-examination of bureaucracy is not limited to the United States alone. During the mid-1960's the Fulton Commission in the United Kingdom criticized the British civil service along the same lines as those appearing in the United States. There is also evidence that this same sort of re-evaluation of bureaucracy is going on in Germany, France, and Italy.[16]

---

[15]Berkeley, op. cit., p. 13.

[16]Ibid., p. 14.

As the power of the administrative state has grown, so have grown restraints upon that power. The device of the ombudsman, originally a Scandinavian idea, is now being used in the United Kingdom, Australia, New Zealand, and Germany, and in the United States itself, in the states of Hawaii, New York, and New Jersey. Even in France, an administrative revolution is occurring, affecting even the Conseil d'Etat, in which the weight of procedure has shifted from favoring the government to favoring the private citizen.[17]

In almost every field, there has been a growth of administrative law, almost entirely aimed at broadening the rights of clients, especially the right to a hearing in contrast to arbitrary administrative decision. Interpretation of criminal law also has shifted to give greater protection to the accused and the suspect. Police and prosecution power has been curtailed. Sentences meted out as punishment to the guilty have tended to decrease in severity, and corporal and capital punishment are disappearing. Police are attempting to change their image, placing emphasis on community relations. It is evident, then, that, as administrative power has grown, the rights of the citizen have kept pace.[18]

There is evidence of an ambivalent attitude toward bureaucracy. On the one hand there is a call for more efficiency within organizations, but on the other hand there is a fear of complete effectiveness. Senator Barry Goldwater once said that "a government which is powerful enough to do all the things you want done would also be powerful enough to take it all away."

In this sense, one recalls the prudent caution that Richelieu is supposed to have insisted on to his administrators: "Above all, not too much zeal."[19] As bureaucracy has grown, so have efforts to restrain its power. This is not a new phenomenon. In the 1920's there were recurrent warnings of extensive bureaucratic power. In Britain, a tocsin on the subject, called The New Despots. appeared; while in the United States a business journal urged that the United States civil service be kept ineffective, else it would become dangerous.[20] While no one

---

[17] Ibid., p. 124.

[18] Ibid., pp. 118-126.

[19] Ibid., pp. 3-4.

[20] Ibid., p. 141.

today would encourage ineffectiveness within the government structure, our disturbed times reflect simultaneously widespread need for more effective social organization and widespread apprehension about it.

The need for effective organization is evident. Once goals are assessed and selected, and their feasibility determined, we confront the strategic problem of properly marshalling resources to accomplish concrete programs and projects--in a word, "macro-engineering." Our society, which produced the Manhattan Project and the Apollo Program, must now learn how to choose and carry out equally vast undertakings on an intersectoral basis (i.e., public, private, semi-private participations). Some hold that recourse to interdisciplinary, intersectoral, and international study groups would point us in the desired direction.[21]

Repeatedly, the prediction surfaces in various contexts that knowledge institutions will assume increasingly influential roles:

> The role of independent research institutions, profit making and nonprofit, will be greatly enlarged and their ties with both factory and campus strengthened to furnish three kinds of services: (a) basic research involving full-time work, large teams, or long-term efforts, or requiring substantial engineering support or unique, expensive facilities; (b) the conduct of applied research, technological development, or proprietary work for government and industry; (c) the provision of technical advice, information, and managerial services in connection with discrete, minor problems, as well as massive enterprises requiring the coordination of many organizations and disciplines in a "system" approach to the solution of complicated technical problems.[22]

Professor Donald Michael echoes these forecasts, predicting, as have others, that the dominant position in the future will be occupied by research scientists, mathematicians, economists, and managers of computer technology, and that the dominant institutions will be research corporations, industrial laboratories,

---

21F. Davidson, "The Case for Institutional Assessment," Technology Review, December 1971, p. 2.

22"Toward 2000," Daedalus, 1967.

experimental stations, and universities. According to Michael, science will become a prerequisite area of knowledge to advancement in other careers, including management, similar to the pervasiveness of law today.[23]

As observed earlier, a number of forecasters agree that intellectual institutions may be destined to replace older industrial organizations as the primary innovative forces in American society. Such institutions may form partnerships or mergers with businesses. This is a question of potentially great importance, but it remains open-ended.

It appears inevitable that complexity in future contexts will require recurrent periods of education. In the opinion of some professionals in the field of development of management, future executives who desire to keep their knowledge current will probably spend up to 10% of their time in executive-education centers. Moreover, centers will be slightly subversive, predicts Professor Kenneth Andrews, of the Harvard Graduate School of Business Administration, because "executives will be taught to challenge corporate policy as a way of life."[24]

Do any particular institutions appear to be aware, however, imperfectly, of these dynamics? Although we have largely refrained from direct discussion of the military context in these chapters, it appears appropriate at this point to cite a particular judgement of that long-time analyst of the military institution, sociologist Morris Janowitz:

> Despite popular stereotypes, in many areas the military establishment is the prototype of rationalized and advanced bureaucratic structures. By the single measure of educational attainment of members, it is in advance of many other sectors of institutional life. In terms of rank stratification it has moved farther toward a middle class or middle majority hierarchy and decline of an unskilled lower class than have most industrial sectors.[25]

---

[23]Donald Michael, op. cit., p. 125; and same author, The Future Society, (Chicago: Aldine, 1970).

[24]William Gerber, "Changing Corporate World" Editorial Research Reports, February 3, 1971, pp. 95-96.

[25]Morris Janowitz, "Organizing Multiple Goals," op. cit., p. 18.

This judgement appears to be related to the comments in the 1972 Congressional hearings concerning the relative decline in lower grade levels in the military grade structure and the changing configuration in the overall structure. It appears to argue that such developments do not connote inefficiency or haplessness.

There will be more of the population in education, in post-graduate education, and in re-education. State University systems and prestige universities may double in size. Some of the distinction enjoyed by private universities will decrease because their dependence on public funds. There will probably be lateral movement of specialists among bureaucracies--e.g., among government, research centers, and knowledge centers.[26]

A provocative perspective toward the fate of bureaucracy is provided by the experience of Warren Bennis. A distinguished professor at MIT and well-known theoretical seminal analyst of organization, Dr. Bennis wrote widely of the coming demise of bureaucracy, stressing that organizations would be subject to rapid change, temporary authority systems, temporary groups, temporary leadership and role assignments, and democratic involvement in organizational goals. In 1967 Dr. Bennis became an academic administrator at the University of Buffalo and, in 1971 president of the 37,000-student University of Cincinnati.

The essence and flavor of his changed views are brought out well in the following exchange[27] with William F. Dowling, editor of Organizational Dynamics:

> Dowling: Dr. Bennis, several years ago you wrote frequently about the fact that bureaucracy was on the way out, that democracy was inevitable, and that over a period of time . . . bureaucracy was going to wither away, to be replaced by temporary systems made up of diverse specialists. Now, if I read you correctly, you've undergone a complete change of heart. You feel that bureaucracy is the inevitable form of organization in a large-scale enterprise, be it public or private.

---

[26]"America's Next Thirty Years--Business and the Future," Council on Trends, and Prospective Economic Analysis and Study Group, Washington: Chamber of Commerce of the United States, n.d.

[27]"Conversation: An Interview with Warren Bennis," Organizational Dynamics, Winter 1974, pp. 52-57.

Bennis: Yes, I think that's true . . . the most important consideration that I didn't take into account is the fact that our greatest employment growth area would be in the public sector and these organizations don't lend themselves to democracy--to management by consensus--first, because of their size, and second, because of the divergent interests of the individuals who make-up the organizations . . . in almost all institutions we're at the end of the consensus period--if we were ever in one. . . . We no longer have communal values, which are what make consensus and negotiation possible in the first place. . . . So the temporary system has its place, but it's not going to occupy a paramount or pervasive position. There will always be a bureaucracy; the sun will never set on bureaucracies. . .

In 1961, Robert Brady eloquently analyzed the demands for new dimensions of cooperation in bureaucratization, and we quote at length:

> It seems scarcely necessary to emphasize the importance of this problem. . . . Bureaucracy, however defined and understood, praised or vilified, is yet everywhere on the flow, and nowhere on the ebb. As all experts now recognize, it is not confined to government.
>
> Long ago, Max Weber made it clear that . . . bureaucratization has been . . . consciously undertaken in large-scale organizations, private and government alike. The stimulus has been the need and the laudable desire to divide, specialize, train, regularize (i.e., subject to rational, impartial, rules), and coordinate duties, functions, and responsibilities. Bureaucracy has of necessity expanded as large-scale organization has expanded--irrespective of whether one has reference to business, industry, government, or private and professional organizations, institutions, and associations.
>
> Further, every effort to integrate and coordinate more closely such wide-ranging functions . . . on an industry-wide, regional, interregional, national, or international basis--multiplies the bureaucratic problems manyfold. The importance of bureaucratic problems in our

society is increasing with the momentum of geometric progression. Giant industrial corporations in recent years have come to pay them a good deal of attention. The reports of the Hoover Commissions on federal organization are essentially studies of bureaucratic problems at the national level. There is a mass of literature to show that the Soviet economy is struggling . . . with a medley of strangulating forces of bureaucratic origin, . . .

Though the leading purpose of bureaucratic organization, as Weber pointed out, is efficiency, yet the hazard is always faced that it may encourage routine and unimaginative performance, endless redtape, the habit of "passing the buck," the tendency to invent duplicating and functionless functions, expansion of staffs beyond functional needs, nepotism, and at its worst a cancer-like spread of petty corruption. If it lacks morale, it breeds what the Germans, with an eye on the great Mendicant and Jesuit inquisitional system of late medieval times, call Kadaver Gehorsam, or listless and corpselike obedience. At any given time, the economic stakes in such a massive institutional freezing of initiative are apt to be very large. . . .

In considering such problems, an initial task is to draw a line, never in practice able to be drawn with too sure a hand, between what constitutes at bottom mostly the routine performance of essential duties requiring special training, skills, and experience--such as law, accounting, statistics, personnel management--and those involving considerable discretion in the shaping of policies, substantive and procedural alike. To accomplish this in government was the purpose of the great civil-service systems set up in Europe and the United States after the middle of the nineteenth century. Most modern industry still ignores this initial problem almost entirely.

The problems of bureaucracy extend over both sides of this line. It is a mistake to suppose, as many experts seem to do, that only the personnel under civil service are involved.

Take, however, this side first. Great though the amount of attention devoted to it in government circles may be, it is yet easy to demonstrate how simply and by what easy steps enormous diseconomies creep into operations through the apparent fault of no one. A single example out of hundreds that might be cited must suffice. While drawn from government practice, the illustration has a special significance for economists.

The Hoover Commission's Task Force, noting the failure of the Armed Services to coordinate food purchases, made a special study of the shipments of canned tomatoes by the several Services and revealed such situations as the Army shipping from California to New York 807,000 pounds of canned tomatoes while the Navy shipped 775,000 pounds from the East Coast to California, and the Army shipping 1,120,000 pounds of canned tomatoes into Texas from five Midwestern states at the same time that the Navy was shipping 933,000 pounds out of Texas to its East Coast Activities.

The Task Force drew the conclusion that the cross-hauling was not the result of inefficient management within the services but rather was due to the fact that requirements and inventory-control operations were independently performed by each without knowledge of the over-all Department of Defense stock positions. The latter part was doubtless correct, but the Commission's own data refute the first. It would take but little knowledge of agriculture to show that the shipment from long distances of canned tomatoes into heavy tomato-growing areas indicated poor warehouse location as well as poor shipping arrangements. Some good linear programming or other appropriate econometric analysis of the shipping and warehousing by each of the Services would have revealed the desirability of general reorganization, not only among the several Services, but also for each alone.

In private industry, however,--and here the importance for economics is of overriding significance--the equivalent of what the Task Force

discovered in the tomato incident is general throughout the system as a whole. . . . While a rich country like the United States may, so to speak, be able to afford preventable wastage of this order, poor and underdeveloped countries cannot. But in any case, it represents a spreading curtailment of efficiency and a mounting drain on resources. . . .

But to come to grips with such problems, administrators and economists must acquire both the capacity to see and the courage to tackle them. When they do, it now seems inescapable that they will have to reexamine not only the formal structures of economic organization, but also the general range of incentives, motives, interests, values, and power blocs which animate and guide the people who make the strategic decisions. If the old competitive theories can no longer serve them well, the newer monopoly theories will prove but little better. History has already moved beyond.

What were previously problems about the market behavior of an indefinitely large number of small concerns, and then of smaller groups of more powerful combinations, are now being transmuted into quite different types of problems . . . so also must former market phenomena now be looked upon as bureaucratic problems . . . whether the larger units of reference be private industrial corporations such as Bell Telephone, General Motors, Imperial Chemicals, or Montecantini; or nationalized industries like the European railway systems, the British Coal Board, and the TVA; or mixed public and private general coordinating bodies like the European Coal and Steel Community; or state industrial establishments like the Soviet trusts. . . .

These are essentially problems of training; of schedules of pay and rates of advancement; of work councils and grievance committees; of individual and group, commercial and noncommercial incentives; of conflicts and harmonies between internal and external social life and organization. The problems range from the types dealt with in the pioneering studies of Roethlisberger and Dickson at the Western Electric plant

during the late 1920's to those taken up more recently in group dynamics, from issues of psychiatric personality adjustment to the right through representation to participate in top policy decisions (e.g., "co-determination"); from the sense of "anomie" of which Durkheim, Mayo, and others have written with such telling effect, to the life values which lead to preference for more leisure time over increase in income. . . .

"Life and spirit," Santayana writes, "are not the cause of order in the world but its result." In human affairs no such degree of order since the theocratic corporativism of the medieval world has appeared to encompass the lives and knit together the common fate of so many human beings as that forecast by the dominant trends in the scientific revolution in industry. But the contrasts between the two great systems of order could not be more striking. This new order is as dynamic as the medieval was static; as material as that was spiritual; as freedom-oriented as that was authority-minded; as life-affirming and worldly as that was death-asserting, pessimistic, and otherworldly. Every one of these basic differences provides a multiplier of unknown dimensions to the scale and complexity of the emerging social order. The rewards of success are material plenty, new freedoms, new creative powers, more leisure, unparalleled cultural opportunities; but among the dangers are those caricatured by Aldous Huxley in Brave New World and George Orwell in 1984--not to mention the intellectual underworld of technocracy and science fiction. . . .

Such seems to be the complex character of the larger problems of the scientific organization of production that appear already to have come tumbling upon us. It is no longer an issue of "plan or no plan" that now confronts the great industrial nations. The facts of technological development have moved, along with a radical change in human aspirations, as though in some grand historical conspiracy to force the human hand--not in a few isolated spots, but everywhere. It is now a problem of plan or cumulative

breakdown; plan on a wider basis, or a breakdown that will bring disaster to all.[28]

C. Organizational Theory.

The study of organizations as such is a relatively new discipline, progressing slowly and not without pain, gradually shedding increasing illumination upon the processes by which organizations develop their internal structures and procedures.

The following account is my abridgement of a paper by sociologist Charles Perrow, to whom I am indebted; his paper is, in turn, an abridgement of his 1972 book, Complex Organizations: A Critical Essay. The paper[29] purports to recount briefly the course of organizational theory in recent decades. Despite compression, I hope I have done justice to his account; and I would not burden Professor Perrow by implying that this account would be endorsed in every particular by other scholars of organizations. It seems to me to be a penetrating and authoritative account; and appears to me to provide a number of insights that assist our own inquiry into the phenomenon of grade creep, not only in familiarizing us with the principal theoretical formulations, but also in three special ways:

1. It reinforces our sense of the accelerating pace of change.

2. It reinforces our sense of increasing interaction between organizations and their environments (after all, organizational theory has not been changing only because more theorists have been thinking more successfully about it, but also because the thing they were examining has itself been changing under their eyes).

3. It reinforces our suspicion that we have not yet reached an optimum plateau of theory--that there is still a great deal we do not yet understand about how organizations work.

---

[28]Robert Brady, Organization, Automation, and Society, (Berkeley: University of California Press, 1961), pp. 415-424.

[29]Charles Perrow, "The Short and Glorious History of Organizational Theory," Organizational Dynamics, Summer 1973, pp. 2-15. Also, Charles Perrow, Complex Organizations: A Critical Essay (Glenville, Ill.: Scott, Foresman & Co., 1972).

Perrow points out that as organizations mushroomed in size and complexity in the early 20th Century, there were few familiar large-scale models--the military, the Catholic Church, and perhaps the railroads, thus limiting the pace and effectiveness of early analytical efforts. Perrow distinguishes two main schools in the course of developing organizational theory: the "mechanical" or "scientific" school and the "human relations" school.

The mechanical school, which was the earliest, has approached organizations as machines encompassed, defined, and explained in terms of centralized authority, and clear lines of authority, specialization and expertise, explicit division of labor, rules, and regulations, and explicit separation of staff and line.

The human relations school emphasizes people rather than machine-like arrangements, accommodations among people rather than precision, and draws inspiration from biological rather than engineering systems. It emphasizes delegation of authority, employee autonomy, trust and openness, concern with the "whole person," and interpersonal relations.

In the early decades of the 20th Century, via Frederick Taylor and others, there first developed the useful concepts of the mechanical school--scientific management or classical management. In time, their chief defect emerged as inability to cope with rapid change. By 1938, Chester Barnard proposed a new theory: organizations were not merely mechanical constructs but were cooperative systems of people. By the end of World War II, this concept, in the form of the human relations theory, became well established. One of its earliest project lines was an attempt to identify the traits of good leadership, an attempt now largely conceded to be fruitless; however, one broad line of this research came to distinguish between employee-centered (people-oriented) leadership and job-centered (mission-oriented) leadership.

Further study of people-oriented leadership led to analysis of group processes, leading to T-group programs, and continues as encounter groups; meanwhile, some theorists extended their findings about groups to groups of groups, or whole organizations,

eventually emerging in McGregor's Theory Y, Blake's 9 X 9 system, and Rensis Likert's System 4.[30]

Meanwhile, the mechanistic school staged a comeback with linear programmers, budget experts, PERT systems, and cost-benefit analysis, with productive results; while the human relations theorists (mostly social psychologists) and bureaucracy-structuralists (mostly sociologists) proceeded to construct increasingly elaborate models, principally of economic institutions. Most theorists of both schools tended to ignore a critical internal element, conflict, even the concept of legitimately conflicting goals and techniques within organizations; for the presence of conflict appeared incompatible with theories of cooperative systems.

Gradually, the notions of conflict and power, essentially within the purview of (behaviorally-oriented) political scientists, pervaded both schools in the 1950's and 1960's.

> Buried in the political science viewpoint was a sleeper that only gradually began to undermine the dominant views. This was the idea, largely found in the work of Herbert Simon and James March, that because man was so limited--in intelligence, reasoning powers, information at his disposal, time available, and means of ordering his preferences clearly--he generally seized on the first acceptable alternative when deciding, rather than looking for the best; that he rarely changed things unless they really got bad, and even then he continued to try what had worked before; that he limited his search for solutions to well-worn paths and traditional sources of information and established ideas; that he was wont to remain preoccupied with routine, thus

---

[30]Likert's typology is representative, classifying organizations according to a range of variables into 4 categories: System 1, Exploitative-Authoritative (of which the military is said to be a prototype); System 2, Benevolent-Authoritative; System 3, Consultative; and System 4, Participative Group, considered by Likert to be the most ideal in achieving organizational effectiveness in both humanistic and performance terms ("Conversation with Rensis Likert," Organizational Dynamics, Summer 1973, p. 33).

> preventing innovation. They called these characteristics "cognitive limits on rationality" and spoke of "satisficing" rather than maximizing or optimizing. It is now called the "decision making school" and is concerned with the basic question of how people make decisions.[31]

Both schools were influenced. Clear lines of authority and issuance of direct orders, as though subordinates were helpless, directionless idiots, were coming to be seen as counterproductive; on the other hand, leaving subordinates entirely to their own devices, as though they were clairvoyants who could detect market changes, etc., was seen as likely to lead to chaos.

Thus behavioral psychology filtered into both theoretical constructs. Rather than attempt to train or change personality, one changed stimuli and premises. Rather than rely on trust, openness, and self-insight, for example, to change behavior into desired channels, one added reliance on palpable rewards--money, comfort, prestige--in supportive rewarding of desired behavior.

Joan Woodward, of Tavistock, added to the discussion a crucial dimension: organizational technology, or type of task. Structures differed in different organizations, she concluded, because they use different kinds of technology in performing their different types of tasks. Bureaucratic structures thus appeared best for routine operations; while temporary work groups and flexible processes appeared best for nonroutine operations.

But what of organizations which contained some sub-systems of routine and some of non-routine? Building on the work of investigators of interdependence and integrating mechanisms among similar and dissimilar units in organizations, Jay Lorsch found that firms performed best when the integrating mechanisms were constructed mid-way between absolute types, that is, neither overwhelmingly bureaucratic nor "adhocratic" (to mangle Toffler's useful term). For example, in routine elements and situations, attempts to utilize participative management (industrial democratization) as a dominant premise proved to be counter-productive.

---

[31] Ibid., pp. 7-8.

Meanwhile, certain sociologists were probing with still different perspectives, attempting in numerous case studies to understand the processes of goal-setting in organizations. They concluded that, contrary to prevailing conviction, conflicting goals could be pursued within the same organization alternatively, or sequentially, or even simultaneously; and that organizational goals are not fixed, but are matters in contention among units within organizations.

They also devoted numerous case studies to analysis of interactions between the organization and its environment (dynamics upon which we touched early, in Chapter II). These studies:

> . . . showed how unique organizations were in many respects (so that, once again, there was no one best way to do things for all organizations); how organizations were embedded in their own history, making change difficult. Most striking of all, perhaps, the case studies revealed that the stated goals were not usually the real ones; the official leaders usually were not the powerful ones; claims of effectiveness and efficiency were deceptive or even untrue; the public interest was not being served; political influences were pervasive, favoritism, discrimination, and sheer corruption were commonplace.[32]

What were the respective schools, and we, to make of these findings? Says Perrow, "We are still sorting it out."

In one sense, the mechanical school has been validated because "organizations are not, by nature, cooperative systems", but the mechanical school is inadequate because it largely ignores the role of the environment. On the other hand, the human relations school is deficient in failing to insist that the health of any organization involves success in achieving the goals of the organization and in successful interaction with the environment, not only success in achieving harmony and personal actualization among its members.

Says Perrow: "But on one thing all the varied schools of organizational analysis now seem to be agreed: organizations are systems--indeed, they are open systems."

---

[32] Ibid., p. 11.

It is deceptively simple to state the essence of the systems concept: everything is related to everything else, though in different degrees of intensity and reciprocity. But to apply the systems concept to analysis of any particular organization is far from simple, and the challenges arising from changing organizational contexts are becoming more complex.

D. Management and Executives.

Some of the basic elements of classic formulations of organization, then, are likely to remain.

While bureaucracies and formal organizational elements will probably endure, their forms are almost certain to change, in some ways which are foreseeable, but also in other forms which will remain largely unpredictable.

Professor Frank Friedlander, for example, has offered a thesis that maintains that changing social and technological environments are creating changes in the tasks of organizations and in the life orientations and values of the people who perform the tasks, so that task characteristics are changing from routine to complex, and life orientations from formal to social to personal. In contrast to Brady's eloquent endorsement of bureaucracy, Friedlander feels that structures that link people and tasks are changing in nature from bureaucratic to organic.[33]

George Kozmetsky is one who distinguishes between "routine" and "non-routine" organizations. The latter grapple most frequently with one-of-a-kind problems. He cites statistics to show that the non-routine sector, in which he brackets government and many of the advanced technology companies, is growing so fast that it will employ 65 percent of the total US work force by the year 2001.[34]

Looking back on the evolution of the executive, Jennings observes:

> The typical insider joined a corporation during the Depression and expected to start

---

[33]Frank Friedlander, Case Western Reserve University, "Technology, Youth and Organizational Structures: Some Changing Patterns Relevant to the Military." Paper at USMA Leadership Seminar, West Point, NY, 1969.

[34]Toffler, op. cit.

> at the bottom and usually did. He was prepared to work hard, to overearn his rewards, to be grateful for advances, and to respect and defer to his corporate benefactors. Advancement was more a reward than an incentive. In that context, changing companies was interpreted as being a quitter and a failure. The cardinal motto of the organization man is "Be loyal to the Company and the Company will be loyal to you."
>
> The Protestant ethic of the "inside man" had been replaced with the social ethic which required the sacrifices of individual excellence for the sake of the general good. A distinction was drawn between knowledge and skills, with the latter favored. A typical motto was "a good manager can manage anything."[35]

The heyday of this type of man was the pre-1950's. Then the sudden growth of business demanded more managers at all levels. Corporations discovered that the men who had moved around made better executives; they were more flexible, more expert at managerial skills, and more broadly (even if less deeply) knowledgeable.[36]

Thirty years ago, H. Frederick Wilkie disparaged the old concept of regimentation, which might be compared to overspecialization:

> One of the tragedies of conventional industry is that it grooves men and women, that it limits their horizons immediately and keeps them limited indefinitely. Only a few ever emerge from the strait jacket of industry to become leaders in the real sense of the word. These men are largely products of a bizarre combination of luck, unusual individual capacity, and availability. . . . Where industry should have produced men of genuine vision, men of breadth and depth, men tuned to the times and capable

---

[35]Eugene Jennings, "Mobicentric Man," Psychology Today, July 1970, pp. 34-35.

[36]Ibid.

> of courageous action, it has given us, on the whole, nonentities puffed out with their own importance, blown up to Gargantuan stature by a corps of "yes men" whose sole occupation it has been to isolate their leaders from all ideas, to inculate the insidious consciousness of infallibility--men to whom power was everything and profit the only key to that power. In an industrial world where are the thoughtful men?[37]

Carl B. Kaufman stresses the complexity of management, and the naivete of the "ten easy steps" to prescribing management rules. He cites a Law of Inverse Certainty: the more important the management decision, the less precise the tools to deal with it. He also cites a First Consequence of the Law of Inverse Certainty: the more important the decision, the longer it will be before anyone knows whether it was right.[38]

It was estimated in 1965 that the number of executives in the United States was about 1.5 million.[39] Will such a proportion be enough in the future? The Research Institute of America foresees a crucial shortage based on the fact that relatively few people were born in the 1930's, producing a shortage in the 40 to 55 age group as 1980 approaches. "Management is not only the most urgent calling of the future but the most critically short resource of all."[40]

Harlan Cleveland is also among those who predict that the demand will rise, generating additional pressures toward the dynamic addressed in this paper: escalation in grade structures:

> The more interrelated are the parts of an economy, a polity, and a culture, the more people it takes to run things. Each year it

---

[37]Frederick Wilkie, A Rebel Yells (New York: D. Van Nostrand Company, Inc., 1946), p. 268. Cited in Myles L. Mace, The Growth and Development of Executives (Cambridge: Harvard Graduate School of Business Administration, 1950), pp. 181-182.

[38]Carl B. Kaufman, Man Incorporate (Garden City, NY: Doubleday and Company, Inc., 1967), pp. 171-172.

[39]Avren, Uris, The Executive Job Market (New York: Arco Publishing Company, Inc., 1965), p. 1.

[40]Ibid., p. 31.

> takes a greater proportion of leaders to participate in socially significant decisions. . . .[41]

Through voluntary and involuntary means, will society produce, or be able to produce, enough competent leaders?

In Chapter IV, we cited Seymour Wolfbein's analysis that of all members of the work force who have a college education, 65 percent are in the "professional" category and 85 percent are in the "professional and managerial category." Of executives in big business, in 1900, 39% had college degrees, and in 1950, 76%--each figure being 10 times the proportion of college men of their age group in the total population. In 1967, for instance, the Du Pont Co. had nearly 2500 Ph.D.'s on its payroll (few universities could match that figure).[42] Is this an optimum distribution of brainpower?

Douglas McGregor expressed these reservations:

> . . . there is not much evidence that high academic achievement represents a necessary characteristic for industrial leadership. There may be a positive correlation, but it is not large enough to provide a basis for a recruitment policy. . . . This question of intellectual capacity is, of course, only one reason why industry seeks the bulk of its potential manager resources among college graduates today.[43]

Nevertheless, while high academic achievement may not correlate closely with industrial leadership, college completion does correlate closely, as Gerber's and Wolfbein's figures clearly show. Yet, there is some cause for concern as current college students report their predilections for future participation in social institutions. A national Gallup Poll of campuses in the spring of 1974 produced these responses[44] to the

---

[41]Harlan Cleveland, The Future Executive (New York: Harper & Row, Publishers, 1972), p. 67.

[42]Gerber, op. cit., p. 96.

[43]Douglas McGregor, "An Analysis of Leadership," In William R. Lassey, ed., Leadership and Social Change, (Iowa: University Associates, 1971), p. 23.

[44]"Teaching Is First As Career Choice," New York Times, April 25, 1974, p. 50.

question "What field or occupation do you plan to enter when you complete your education?"

Teaching	23%	Engineering	4%	Sales	1%
Medical Care	14%	Accounting	3%	Service	1%
Business	12%	Non-mil. govt.	3%	Other	11%
Law	10%	Clergy	2%		
Research & Science	8%	Military	2%		
The arts	7%	Farming	1%		
Social work	6%	Journalism	1%		

What distribution of available leaders at all levels would be optimum, among all the competing institutions in future society? Is it realistic even to suggest that devising such a distribution is feasible? What complex structures of incentives and motivation can be envisioned, in a democratic and pluralistic society beset by future imperatives for increased social planning and social control, in order to provide sufficient numbers of leaders in sufficient varieties to cope with the myriad challenges in store?

E. Leadership.

Despite an enormous literature over a span of centuries on the study of leadership, Charles Perrow says: "The burning cry in all organizations is for 'good leadership,' but we have learned that beyond a threshhold level of adequacy it is extremely difficult to know what good leadership is."[45]

In reference to the long endeavor to develop stereotyped lists of leader traits, Dr. T. O. Jacobs of HUMRRO, after surveying hundreds of projects dealing with the subject, concluded that after 40 years of effort, it becomes clear that there does not exist any persuasive syndrome of traits of leadership that are invariably successful across a range of different situations.[46]

An interesting perspective on the modern context of leadership is the contention that with emphasis on complex teams of

---

[45]Perrow, "Organizational Theory," op. cit., p. 13.

[46]T. O. Jacobs, Leadership and Exchange in Formal Organizations, (Washington: Human Resources Research Organization, 1970), p. 17.

specialists in organizations, the charismatic leader, the Great Man of politics or business, is dying out.[47] Whether this trend is beneficial or harmful, or whether it will survive a grievous national emergency, appears conjectural at this stage.

Advanced technology will exert imponderable impacts on the exercise of leadership. Routine activities, especially in such information-processing fields as accounting, inventory control, personnel records, etc., will be substantially automated, resulting in some technological displacement of personnel, especially at the junior and some middle-management levels. The design and operation of advanced information systems will demand a new group of specialists not present today.[48]

The changing context of leadership is indicated by the comparative ages of men in current leadership positions, and by the channels by which they reached their positions. From 1964 to 1968 the average ages of men in the positions of board chairman, corporation president, and new officers was 59, 50, and 41; whereas from 1948 to 1953, they had been 63, 59, and 50 respectively.

More men who become corporation presidents do so after joining the corporation at a high level, rather than after working their way up through the ranks in one company. Fewer men who follow an inside route to a presidency do so by plodding along the straight upward path of the traditional insider; instead they go around the edges. The largest number of officers are now in the middle of middle management,[49] but this proportion may change.

Most presidents of large corporations during the last 20 years spent no more than 3 years as salesmen, engineers, etc., or whatever they were when they joined the company. They remained managers for 10-15 years, changing jobs at least once every 2 years. The average future president moved laterally once for every 2 moves up; moved outside his own technical area once for every 2 moves within it; and moved geographically once for every 3 moves within the corporation.

---

[47]Berkeley, op. cit., p. 89.

[48]Impact of Future Technology on Navy Business Management, Vol. 1, Palo Alto, Calif.: Management and Economic Research, Inc., Report for US Department of the Navy, January 1968 (AD824692).

[49]Jennings, op. cit., pp. 34-36.

The mobile manager never expects to complete a job, and he is prepared to depart soon after he arrives. He "maps" or assesses the demands of his new position, assigns priorities to them, and studies the differences between the skills he already has and the ones that will get the new job done most efficiently.[50]

A discussion of leadership by Army Brigadier General Hoefling (based on research by Drs. Frank Friedlander and Thomas E. Bier) identified three basic behavior patterns which challenge, for example, the military's capacity to weld them into a cohesive structure: 1. the Establishment-oriented group who prefer a clear, disciplined organization and meaningful objectives and who work well with traditional forms of leadership; 2. a socially (popularity)-oriented group, who respond best to peers and to consultative, "democratic" styles of leadership, and 3. a rapidly growing personal-oriented group, who are self-centered and work well only under permissive leadership. These orientations cannot be expected to change, no matter how training or reasoning are applied. The emerging leader will have to operate flexibility within a range of variable leadership styles--generally in the middle of the leadership range, with adaptations for the extremes.

The crux of General Hoefling's discussion is whether or not the third group's usefulness to the organization outweighs the difficulty of dealing with its members. Within the military, for example, he would not assign such individuals to team-oriented combat units; but he would exploit their talents in assignments in logistics, research and development, and similar areas.[51]

A modern theory of leadership derives from social-exchange theories, and, in the form of a "contract theory," has proved of considerable interest to organizations, including military organizations. It holds that there is a contract, partly explicit, partly implicit, between an organization and its members. The organization has numerous ways to articulate its understanding of the contract, whereas each individual has, on his

---

[50] Ibid.

[51] John A. Hoefling (Brig. Gen., USA), "Leadership in the Modern Volunteer Army," Army, August 1971, pp. 38-42.

side, only limited means to express his understanding of what obligations, commitments, and autonomies are involved. At the sensitive interface stands the leader, with obligations to both sides, judged on his performance according to his success in simultaneously seeing to it that the organization's objectives are met and that the objectives of his people are satisfied.

In relation to modern perspectives toward leadership, the conclusion of Dr. Rensis Likert is pertinent and important: "people-oriented" supervisors get the job done better than "mission-oriented" supervisors.[53]

In modern contexts, the traditional "be-tough" method fails; but the paternalistic "be good" method fails, also. What works best, it is more frequently suggested, is self-direction. Self-direction is the core of McGregor's Theory Y. Theory X is the old theory, which holds that people don't really want to work; they have to be pushed (and since this is believed, to a large extent, they have to be). Theory Y, on the other hand, holds that people really do want to work, and that, by managers' eliciting their innovative power, by "unleashing" them, they do more and better work, with less direction.[54]

Nevertheless, as something of a caution against sentimental assumptions that organizations may be able to get along almost without leadership in the future, we cite here the powerful account given by the same eminent organization theorist, Douglas McGregor, who, like Warren Bennis, left MIT after years of eminence in theory and became a college president--Antioch College, in McGregor's case. Here he describes his personal struggle with the role of leader:

---

[52]US Army, Leadership for the 70's, Carlisle Barracks, Pa.: UW Army War College, 20 October 1971.

[53]Cited in Hoefling, "Leadership," op. cit.

[54]Cited by Berkley, op. cit., pp. 15-18. See also pp. 44-47. McGregor's theory was built on the work of Abraham Maslow. See also Arnold Mitchell, "Human Needs and the Changing Goals of Life and Work," in Best, op. cit., pp. 32ff. Peter Drucker holds that McGregor insisted that both approaches are viable, a qualification which appears to be not widely understood. See "An Interview with Peter F. Drucker," Organizational Dynamics," Spring 1974, p. 35.

> Before coming to Antioch, I had observed and worked with top executives as an adviser in a number of organizations. I thought I knew how they felt about their responsibilities and what led them to behave as they did. I even thought that I could create a role for myself which would enable me to avoid some of the difficulties they encountered.
>
> I was wrong! It took the direct experience of becoming a line executive and meeting personally the problems involved to teach me what no amount of observation of other people could have taught.
>
> I believed, for example, that a leader could operate successfully as a kind of adviser to his organization. I thought I could avoid being a "boss." Unconsciously, I suspect. I hoped to duck the unpleasant necessity of making difficult decisions, of taking the responsibility for one course of action among many uncertain alternatives, of making mistakes and taking the consequences. I thought that maybe I could operate so that everyone would like me--that "good human relations" would eliminate all discord and disagreement.
>
> I couldn't have been more wrong. It took a couple of years, but I finally began to realize that a leader cannot avoid the exercise of authority any more than he can avoid responsibility for what happens to his organization.[55]

Keeping McGregor's experience in mind, but looking toward the uncertain future, we cannot escape cognizance of several other trends related to the decline of the classic organization man: the growth of the importance of innovation in organizations, for example, with an increasing premium on people who think for themselves; a greater tolerance for the eccentric personality; increasing emphasis within organizations on internal cooperation; and declining emphasis on competitiveness.

---

[55]Douglas McGregor, "On Leadership," Antioch Notes, 31 (1954). Quoted by Warren G. Bennis, Leadership Theory and Administrative Behavior: The Problem of Authority," Administrative Science Quarterly, Vol. LV. IV: No. 3 (Dec. 1959), pp. 260-261.

With the advent of burgeoning specialization, authority rests more on expertise, which is more widely distributed than hierarchial authority. This situation by its nature, will probably require circulation of leadership roles in different situations which stress different expertise.

Both of the above trends render conventional classification more ambiguous. As statuses shift in accord with changing leadership-expertise roles, classification is starting to decline in some organizations.[56]

Anthony Downs emphasizes the role and value of the "outsider" within an organization; such a person can be typified as being an "individual" rather than a "yes-man." Downs refers to him as a "zealot." Organizations with rapidly changing social functions, he says, must encourage "zealots." They are, according to Downs, the idea men dissatisfied with the status quo, willing to propose new or radical methods. Organizations will be depending more and more on those with the least amount of obedience to normal organizational restraints.[57]

F. Professionals.

All organizations have increasingly come to rely on the special skills and talents of the professional. Given the specialized training of these workers, they have come to be viewed as an important component group within any organization. However, just as their backgrounds have prepared them to deal with unique problems, it has also given them a distinctive self-image. This individualistic "aura" surrounding the professional has been the subject of many studies, which identify several factors apparently common to all professions:

a. A potential conflict of interest between the professional and his client. The stress and strains of the relationship serve as a focal point for the analysis of the social process.

b. Social control by members of a professional group exerted against inroads by outsiders (licensing, ideology, etc.).

c. Defining the amount and kind of work to be done.

---

[56]Berkeley, op. cit., p. 70.

[57]Anthony Downs, Inside Bureaucracy (Boston: Little, Brown and Company, 1967, 1966), p. 110.

d. Prestige.[58]

Parsons has said that the difference between business and professions is to be found in institutionalization which harbors both areas:

1. These two organizational aspects of the division of labor are becoming more and more important in American society;

2. These two elements express both common and differential values in their understanding of American society, as well as of modern societies in general;

3. Actual interconnections emerge between the two organizational modes, as they are found operating jointly within the same organization or social structure (e.g., doctors, professionals, located within a hospital, a bureaucracy).[59]

Interest in the study of professions appears to have been sporadic until the 1950's. Emphasis in the study of professions has centered around social-psychological elements in professionalization, the self-conceptions of the professional, and conflicts and stress emerging from changing status and from the development of a specialized group of persons wielding highly developed occupational skills. The notion of process--ceaseless change and adaptation--has been basic to developments in this field.[60]

All scales rating prestige of occupations put professions near the top.[61] A cross-national study of prestige rankings of occupations in six industrialized countries--US, U.K., USSR, Japan, Germany, and New Zealand--concluded:

> High correlations are found, indicating that the occupations are ranked in a relatively standard hierarchy, despite the cultural differences among the six nations.

---

[58]Robert C. Stone, "The Sociology of Bureaucracy and Professions," Joseph Rousek, ed., Contemporary Sociology (New York: Philosophical Library, 1958).

[59]Ibid.

[60]Stone, op. cit.

[61]David Samoff, "No Life Untouched," Saturday Review, July 23, 1966, pp. 21-22.

> An interpretation is offered in terms of the universal features of the industrial occupational system and the centralized national state to be found in each nation. Variations in prestige as between one country and another center mainly about the agricultural and service occupations.[62]

Thus, the professional trend is a phenomenon of all highly industrial and urban societies, mostly in institutional settings. A profession delivers esoteric services--advice, action, or both--to individuals, organizations, or governments. The nature of the knowledge involved is often a mixture of practical and theoretical, gained both by long study and by apprenticeship under masters already members of the profession. Professionals "profess" to know better than others the nature of specific matters and to know better than their clients what ails them or their affairs. From this flows many consequences: the claim to the exclusive right to practice the arts which they profess to know, and to give the kind of advice derived from their special knowledge. This is the basis of the license. The collective claims of a profession are dependent upon a close solidarity which, in turn, implies deep and lifelong commitment. A man who leaves a profession, once he is fully trained, licensed, and initiated, is considered something of a renegade.[63]

Bennis summarizes the professional's role in organizations:

> Most organizations regard economic rewards as the primary incentive to peak performance. These are not unimportant to the professional, but, if economic rewards are equitable, other incentives become far more potent. Professionals tend to seek such rewards as full utilization of their talent and training; professional status (not necessarily within the organization, but externally with respect to their profession); and opportunities for development and further learning. The main difference between the

---

[62]Alex Inkeles and Peter H. Rossi, "National Comparisons of Occupational Prestige," American Journal of Sociology, LXI (January 1956).

[63]Samoff, op. cit.

professional and the more conventional, hourly employee is that the former will not yield "career authority" to the organization.[64]

One effect on organizations has been erosion of organizational insularity. As professionalization increases, a greater part of the work force tends to be more loyal to the goals and standards of the various professions, and less committed to the goals and standards of the organizations in which professionals work. Berkeley cites a General Electric "Report on Our Future Business Environment": ". . . it will become progressively easier for an individual to consolidate his prime commitment to his professional and/or his self-development, not to a single organization."

Another possible trend is an impulse toward wanderlust in certain types of professional individualists--people who, according to Peter Drucker, tend to get bored with their own knowledge in twenty years or so, and who set out for new work challenges, or even new careers.[65]

Tension arises in this relationship. Professionalization is rising, and professionals are vital to organizations. However, as Slater, Bennis, and others observe, professionals do not make good organization men. Professionals derive their rewards from inward standards of excellence, their professional societies, and the intrinsic satisfaction of their tasks. They are committed to the task, not the job; to their own standards, not to the standards of the boss. A study of various aspects of the brain-drain done in the United Kingdom substantiates these findings; the nature of the work is more important than money. Bennis and Slater feel that it is futile and counter-productive to try to break this primary commitment to the profession rather than to the organization.[66]

Organizations will feel the impact of many other trends in society related to professionalization. The strong emphasis on education tends to take members outside the organization for contacts. The former policy of many organizations to recruit from particular social, ethnic, or religious groups (e.g., focused

---

[64]Michael, The Future Society, op. cit.

[65]Berkeley, op. cit., p. 152.

[66]Ibid., p. 71.

diplomatic corps recruiting from the upper class) will be replaced by trends toward representativeness; the modern organization will be less likely to become the "captive" of any one group. The federal bureaucracy, for example, is already more representative of the American population than is Congress. Included in the trend of increasing representativeness will be the dropping of sex barriers in all organizations and professions.[67]

G. The Individual vs. the Organization.

The relationship between the individual and the organization goes beyond simple economic considerations. Involved are broad issues of personal freedom, dignity, responsibility, and life-style. A question presented with increasing urgency is this: to what extent must the individual submerge his own attitudes and values to conform with those of the organization? Further, what is the nature of the relationship in terms of responsibility--the individual's responsibility toward the organization, and the organization's responsiblity toward the individual? Is tension endemic in this relationship? These issues are as much philosophical as functional or economic in nature.

Robert Neville, for example, in his review of B. F. Skinner's Beyond Freedom and Dignity, argues that the fact that Skinner does not take freedom seriously means that his arguments against it are beside the point. The concepts of "freedom and dignity" are, for Skinner, consequences of environment. Neville argues that there is an interiority to man, that internal factors are just as compelling as environment.[68]

William F. Whyte, on the other hand, accepts Skinner's basic formulation: behavior is shaped by its learned consequences, positive and nagative, and positive consequences (reinforcers) are generally more effective in influencing behavior. But, Whyte argues, Skinner's is a laboratory formulation appropriate to few and simple alternatives. In the complexities of real-life situations, Whyte maintains that any adequate formulation must also deal with the following considerations facing human beings:

---

[67]Ibid., p. 154.

[68]Hasting Center Report, No. 3, Hastings-on-Hudson, NY.: Institute of Society, Ethics, and the Life Sciences, December 1971.

1. The cost-benefit ratio of each of many alternatives and the social comparison process;

2. The problem of choice among many conflicting and simultaneous stimuli, all of which are part of the environment;

3. The problem of lag (there may be a long interval of reflection before the effects of conflicting stimuli are resolved and able to influence perception);

4. The one-body problem (single-individual aspects may not govern; interactions among many individuals may be more important).

The long-familiar American concepts of the "organization man" and conformity within organizations, noted by such diverse observers as Alexis de Tocqueville and Sinclair Lewis, appear to be declining in American life. Several explanations have emerged, which bear considerable significance for organizations:

1. The emergence of the welfare state, which provides cushions; the individual is less dependent on a single organization for livelihood. In turn, this curtails the power of organizations to control their members.

2. The growth of unionism.

3. Growth of public corporations versus private corporations; public service is, in general, more responsive to the public.

4. Growth of the knowledge industries, which accounted for one-quarter of GNP in 1955, and one-half of GNP in 1970 (for example, teaching is now our largest single occupation).[69]

"Growth," then, is largely contradictory to "adjustment," as it is thought of in formal organizations. The tendency of organizations to require people to adjust to conditions as they find them runs counter to their healthy development toward independence and growth. Professor Chris Argyris feels that since organizations require that a man be dependent and that his natural tendency is toward independence, a conflict results.[70]

---

[69]Berkeley, op. cit., pp. 68-69.

[70]Whitsett, op. cit.

Argyris expresses concern that such organizations tend to allow employees to use very few of their abilities. Most human problems in organizations arise because of this division of labor and specialization of tasks. At all levels, particularly the lower ones, "healthy individuals will tend to have their self-actualization blocked or inhibited because of the demands of the formal organization." The final act of the resultant individual behavior is that many people leave the organization.[71]

Other results of such an organizational structure may be these:

1. A person can continue to aspire and actively seek the objectives of independence and growth; if so, he will probably not make a good "adjustment" on the job; or

2. A person can resign himself and turn to other, more modest aspirations. He may, for example, take an increased interest in monetary return or heightened appreciation of the work environment, to the exclusion of satisfaction derived from the performance of the task itself.

The implications of long-term work blockages, seen in some older generations of employees, is that they get tired of fighting the system and look elsewhere for satisfactions. Thus, many are not very productive workers.[72]

In a somewhat parallel analysis related partially to the conflict between the individual and the organization, a psychological mid-career "crisis" seems to stem from the fulfillment of goals selected in early mature life: the departure of children; and a new generation of colleagues. Levinson says that those who resolve the crisis successfully adopt new value systems, and experience a new surge of vitality; the others succumb to complacency.[73] These findings have significance for organizations struggling to devise career structures within broad and complex social contexts.

In a similar approach to modern life, clinical psychologist David Guttman first identified patterns of adult male personality

---

[71] Ibid.

[72] Ibid.

[73] See David Heistand, Changing Careers After 35.

development. In 1956, he analyaed the results of tests of men aged 40-70 in Kansas City; and he had since replicated the study cross-culturally. He describes man in early adulthood as autonomous, aggressive, and self-reliant. At about the age of 55, because of making necessary accommodations with various restraints, he stops seeing the world as something he can conquer. By 65, he regards his troubles as beyond his, or anyone's control. These stages parallel, in reverse, the sequence of childhood ego development.[74]

An interesting analysis of included status and excluded status in modern social ferment has been developed by Murray Milner, Jr. He described "the included"(upper and middle classes, and the "respectable" working class) as being weary "because their successes are less satisfying than they had anticipated." The "excluded" are frustrated because they know the dice are loaded against them and "there is no other game in town."[75]

Milner contributes a term, "status inflation," relevant to this inquiry on grade creep. "Status inflation . . . is the social process through which the status value of any absolute amount of individual resources decreases as the average level of these resources increases." Essentially, this amounts to widespread erosion of personal status, leading to "more striving by the individual. When a large proportion of the population so strives, the result is additional status inflation and the cycle begins again."

Status inflation follows from equality of opportunity amidst significant inequality of status and resources, because everyone can lose as well as gain status. This possibility produces status insecurity or anxiety among most individuals, and encourages status seeking, which leads again to status inflation.[76]

In pursuit of ever-escalating status in modern industry, as Jennings has observed, it takes about twenty years on the average to go from first-level manager to president, during

---

[74]Walter Kaufmann, Behavior Today, February 7, 1972.

[75]Pamela Roby, American Journal of Sociology, Vol. 79: No. 5 (March 1974), p. 1346. Review of Murray Milner, Jr., The Illusion of Equality: The Effect of Education on Opportunity, Inequality, and Social Conflict (San Francisco: Jossey-Bass, Inc., 1972).

[76]Ibid.

which time there are, on the average, seven geographical moves, eleven positional ones, and countless numbers of special project assignments. But what of the multitude of others who do not become president, who may have become scarred veterans in the running conflict between the individual and the organization? Or those who developed high levels of competence without opportunity to exercise their competence, thus fulfilling the organization but not themselves? We are only beginning to scratch the surface of the problem of synthesizing the plethora of available discrete fragments of emerging knowledge related to man in the organization--fragments from biological, psychological, genetic, cosmic, spiritual, economic, primary group, or even existentialist perspectives. It appears that physical and spiritual forces fuel rhythms of individual human existence that are shared in common by large numbers of human beings. Simultaneously, we feel impelled to recognize in unprecedented ways the uniqueness of each individual.

How can organizations cope with such challenges in devising equitable conditions, including structures of statuses, of labor-allocation, and of rewards, compatible with functional imperatives and pluralistic motivations and performances?

A future projection predicts that by 1990, no matter how diverse their interests may be, men will not be content to work in organizations they cannot affect. And organizations will have to adjust to the condition that many of their members who can afford non-subsistence activities may have greater personal loyalties to avocations and professions than to organizations.[77]

All organizations, in varying degrees, will come to be operated less by the dictates of administrative convenience and more by the wants and aspirations of their membership.[78]

---

[77]Shepherd Mead, "How to Survive the Generation Gap," Signature, May 1970, pp. 46, 86-88.

[78]Little and Gordon, op. cit.

CHAPTER VII
SUMMARY AND CONCLUSIONS

General.

In summarizing this study, we refer back to five basic questions about alleged grade creep in the military establishment, which were asked at the outset:

1. Are the allegations true? Are average military grades escalating in fact?
2. If escalation is occurring, is this trend good or bad?
3. If escalation is occurring, is it peculiar to the military establishment?
4. If the trend exists, and if change is desirable, is it feasible to arrest or reverse the trend?
5. If grade creep is occurring, why is it occurring? What are its sources and what fuels it?

We can readily dispose of three of these questions.

It appears inarguable that grade creep is occurring in the military establishment; the analysis presented in the 1972 Hearings, and in other sources, advances incontrovertible data.

As to whether grade creep is a beneficial or harmful development, this paper vouchsafes no conclusion, one way or the other. Whether grade creep is good or bad, is considered outside the purview of this study.

As to the feasibility of arresting or reversing the trend, if it were thought desirable to do so, again this study arrives at no conclusion. Underlying a judgment as to desirability would necessarily be a prior judgment as to whether grade creep were good or bad in the first place. In addition, another fundamental question on desirability would obtrude: if the trend is considered undesirable, who are the parties who consider it so? There are probably differences in perception of this issue. Even if one desired to arrest or reverse the trend, attempting to do so would doubtless be a formidable undertaking; and no attempt is made to cope with that challenge here.

Eliminating those three questions leaves two: Why does grade creep occur? Is it a phenomenon peculiar to the military?

In a sense, it is gratuitous to ask why grade creep occurs. One can observe that a phenomenon is occurring, and be useful and informative merely by reporting that observation; but "Why" questions are usually the hardest to answer, for interactions among roots and fuels of broad social movements are highly complex. One can feel confidence in assessing a limited number of linkages between cause and effect; but other linkages are so numerous, multistranded, tenuous, and imponderable that high confidence is not warranted in one's assessments of them. Thus, it might be pardonable to finesse that particular question, and to report only indicators of what is happening, without attempting to deduce why.

Nevertheless, without any illusion that we are explaining the dynamics of grade creep in toto, we report a number of apparent linkages of grade creep with sources and fuels that appear reasonably charged with some responsibility.

Both questions are intertwined to a considerable degree. If our analysis were to indicate that grade creep is occurring simultaneously in a number of social institutions, not solely in the military, and if particular instigators of grade creep can be discerned as operating in common among such institutions, then certain dynamics affecting institutions can be identified with reasonable confidence as contributors to the phenomenon of military grade creep.

While we include one "military" heading among the following categories, we are aware that the coverage given here of the military category, as of every other category, provides only partial explanation of why grade creep is occurring.

A few Internal Factors Which Appear to Have Some Causal Relationship to Grade Creep Within the Military Establishment.

It bears repeating at this point that a number of dynamic forces, some unique or predominantly peculiar to the military function, operate internally in the military establishment and appear to affect grade structures. From the beginning of this study, we left most such factors to analysis by specialists; but we paused to cite a few such factors, and we repeat citation of several of them here, namely:

1. An imperative for physical vigor and relative youth operates even in higher levels of the military grade structure, requiring selection out and retirement at earlier stages, on the average, than of executives in civilian organizations.

2. The uniqueness of war-fighting skills can be developed only within military contexts, precluding lateral transfer of higher executive and professional skills into the military.

3. Intensive career-long evaluation, training, and education pervades the military, developing advanced capabilities in many persons and causing competitive selection of relatively few out of pools of highly qualified persons.

4. The rank-in-the-man concept, coupled with drastic post-emergency reductions in force, results in residual lag in eliminating large proportions of higher-graded persons excess to the needs of rapidly reduced organizations.

5. The unique experience of large-scale casualties during conflict periods results in the presence of more persons on board in each grade, including higher grades, than represent the sum of all such grade-positions in organizations.

6. More comprehensive requirements for incumbents of leadership and administrative positions occur in total institution.

7. The enormous scale of the military institution requires reservoirs of persons at all grades who are not at any particular time performing substantive functions (e.g., those in hospitals, in transit, on leave, on sabbaticals, on loan to other government and private agencies, etc.).

8. The steady program has been urged by Congress, to replace military persons with civilians. This tends to occur in lower-graded positions, thus removing lower-graded military positions from the military grade structure, and escalating the average grade in the structure.

9. Steady progress has occurred in eliminating the general-duty soldier, the military equivalent of the unskilled laborer, not only through civilianization but also by upgrading technical skills required, and hence upgrading the average status of those who remain.

10. The All-Volunteer Force Program has included such measures as hiring local civilians, or civilian contract agencies, to perform such menial tasks as kitchen police, thus upgrading the status of even the lowest military grade.

11. Compensation for the lowest military grade has quadrupled since 1965, thus placing considerable upward pressure on all pay levels above the lowest, and inevitably, upon the military's average grade.

Some Indicators of Grade Creep Within the Civilian Area of Government.

A number of evidences of escalation may be discerned in the civilian Federal work force, including the following:

1. Direct support of Congress has increased from 5,000 persons in 1954 to 13,500 persons in 1971.

2. An increase of approximately 67% in staffing senators' individual offices occurred between 1960 and 1970.

3. The Executive Office increased by 25% in staffing and 100% in budget over 3 years from 1968 to 1971.

4. An increase of almost 600% in civilian quota supergrades in the Federal Government occurred between 1949 and 1972 (and comparable escalation in supergrades in other categories).

5. An increase in supergrade-and-above civilians occurred in the Department of Defense, between 1954 and 1972, from 222 to 1526 (588%), while general and flag officers increased from 1205 to 1249 (3 1/2 %) over the same period.

6. The highest five General Schedule levels increased by 14% since 1968, while the strength of the lowest five levels decreased by 15% in the same period, inevitably escalating the average grade.

7. The number of general clerical positions in the lowest 3 grades declined by 1961 to 28,000 out of the total of 2.5 million Federal civilian employees (by 1964, technicians outnumbered typists).

8. A steady increase has occurred in higher-grade positions faster than lower-grade positions; while white-collar positions increase, blue-collar positions decrease.

9. The judgment was asserted by former Assistant Secretary of Defense (Manpower and Reserve Affairs) Roger Kelley that grade creep is more startling among the Civil Service than among the military.

Some Forces Which Appear to Have Causal Relationships to Grade Creep Within the Context of Government at All Levels.

A number of forces, including the following, operate widely within the entire context of government, and are not peculiar to the military but impact on the military more or less the same as on other government agencies:

1. During the Johnson administration, explicit statutory provisions were enacted, for the first time in history, to maintain government compensation comparable to compensation in the private economy; since government salaries had lagged behind for many years, a surge of efforts have been launched to catch up, escalating all government salaries over the past decade.

2. State and local governments employ 4 times as many people as the Federal Government, and are becoming steadily more competitive with the Federal Government for skills and experience relevant to government; competitive pressures toward upgrading thus increase Federal job statuses and pay structures, both civilian and military.

3. Some government occupations are unique, without counterpart in the private sector. This tends to eliminate the utility of keeping pace with private industry, and may permit upward pressures based on uniqueness (this coin has a reverse side, of course; certain jobs unique to government may have no counterparts with which to achieve comparable status, and the lack may be disadvantageous to incumbents).

4. The power of the administrative state is growing in all societies; in the United States, public employment is growing faster than private employment. Government comprises a steadily increasing proportion of the work force and the economy. Hence, the weight of this sector of the work force and the economy increases in importance; public agencies are less likely to depend on private-economy models for precedents (and limitation) in developing grade structures.

Indicators and Instigators of Grade Creep in the Broad Context of American Society.

1. Social. Beyond the government context, forces are at work, such as those cited below, which permeate government walls in both directions and affect all major institutions in American society, public and private, alike. Some forces are political, some economic, some social, some peculiar to the work force; and many are mixed in their effects. We shall indicate first some of these social indicators:

a. The most important factor in changing occupational structures is change in social values (Johnson), a conclusion of particular relevance in this period of dynamism among American values.

b. Mobility remains a powerful dynamic in all societies, and is especially characteristic of American society. Moreover, channels of mobility are multiplying in all societies, both advanced and modernizing societies (Wilensky).

c. Status-seeking remains a powerful contributor to mobility in American society, and all its social institutions. Status-seeking generates continuous status inflation (Milner).

d. Knowledge is proliferating at geometric rates, and knowledge occupations and workers are proliferating swiftly in the work force. As non-manual occupations increase, pressures increase for escalating status, in the classic pattern of non-manual workers. Educational requirements steadily rise for most occupations, including blue-collar jobs. The education-skill channel emerges as the most important route to power in society (Bell). The largest occupation, education, has been experiencing escalation in numbers, pay, and specialization; yet many teachers surveil fewer pupils and fewer class hours per week. Graduate degree accessions are multiplying geometrically, and educational attainment rises in absolute and median terms throughout the entire American population. In sum, requirements for brainpower and skills are rising, spurred by many sources and spurring higher educational attainment. Such escalation increases two factors affecting grade creep: competence and expectations.

e. As the median of educational attainment rises nationally, larger proportions of the population become increasingly sophisticated and participate more actively in political processes. Certain implications arise, to the effect that societies will be less manipulable by elites, that political power will become widely diffused, that the dominant political consensus will downgrade elite status and upgrade <u>average</u> status, and that economic power may follow suit. Economic benefits may be more equitably distributed, affecting status and pay structures.

2. <u>Economic.</u> Certain forces, best identified in connection with the economy, tend to encourage status escalation in all, or most, major social institutions. The following appear notable:

a. Inflation has steadily increased in intensity, the national wholesale price index, at the end of July 1974, standing at 161.7% of the 1967 average, 20.4% above the 1973 level. The effects of such inflation on pay scales, probably the clearest indicators of relative status, are irresistible.

b. Exclusive of inflation, affluence is a pervasive condition in America. Affluence changes priorities among values; as soon as basic wants are satisfied, they cease to be motivators of behavior, and men turn to other "higher," more sophisticated wants (Masland and MacGregor). While certain fundamental American values remain influential, such as status seeking and rising expectations, others are undergoing change in emphasis (Reisman, Kluckhohn, Williams, Rescher, Bell, et al).

c. Compensation is rising steadily and relentlessly in all sectors of the labor force in all advanced societies, inevitably generating increase in the average pay and status within each institution.

d. More than direct compensation is escalating; it is estimated that by 1985 fringe benefits will constitute 50% of total compensation. Since most of the increase in fringe benefits in the private sector has occurred within the past 25 years, the previous situation, in which significant differentials in fringe benefits, in lieu of comparability in direct pay, existed to the advantage of the military, has disappeared. The elimination of this relative advantage, one of the few enjoyed by the military in comparison with private sector and the civilian sector of the government, introduces some degree of escalating pressure upon the pay structure of the military.

e. Starting salaries for many professions, in addition to the military, have risen sharply in the past decade, thus driving up pay scales at all levels above the lowest.

f. At the same time, a comparable factor, the national minimum wage, has been raised by legislation, including additional statutory raises during the next two years. Raising the minimum wage throughout the nation cannot help exerting upward pressure on pay scales in numerous institutions throughout American society, including individual expectations involved in military efforts to attract entrants from civilian society.

g. Life expectancy increases, swelling the numbers and proportion of the elderly in the largely non-productive post-work sector of the population; the average age of retirement from the work-force, both mandatory and voluntary, is declining, also swelling the elderly sector. At the other extreme, the early dependence period of education and life-preparation stretches out. Declining proportions of the young and of the elderly participate in the work force. The economic value of benefits available to both sectors increases and is not likely to be reduced. Accordingly, the economic burden of "supporting" the entire society falls increasingly on the dwindling (proportionately) income-earning sector of the population, underwriting that sector's demands for escalation in grade and pay status.

3. Work Force. The American work force is a special context, pervasive throughout the public and private sectors of American society. Certain factors, such as those below, operating in the total work force, inevitably affect the military grade structure:

a. Upgrading is a significant long-term trend occurring among all occupations (W. E. Moore).

b. Every indicator points to higher requirements of employability in the future, and an increasing percentage of unemployables in all age groups (Chamber of Commerce of the U.S.).

c. Workers are less dependent upon their work organization, due to unemployment compensation, Social Security, medical insurance and similar benefits, and other current arrangements. Hence, there are fewer restraints upon making demands.

d. The average age among top executives in business and industry, is steadily becoming younger, and executives are more mobile.

e. The context of supervision is steadily becoming more complex. The proportion of foremen per 1,000 employees in the entire American work force rose from 2.76 in 1940 to 4.23 in 1960 (thus escalating the average grades in the entire American work force).

f. The more complex the context, the more leaders it takes to run things (Cleveland); for this and other reasons, management skills will be the most critically short resource by 1980 (Research Institute of America).

g. The ratio for executive requirements is less stable than that for supervisors. The demand for executives appears to increase with size, but details differ in every organization.

h. Specialization is accelerating rapidly in most occupations. The fastest growing sector of the work force is that requiring the highest-trained people.

i. A substantial level of intermediate workers is proliferating, viz, paraprofessionals, involving skills above those of apprentices and journeymen but lower than full professionals. These perform many routine functions for which professionals are responsible but not requiring high professional skills. In general, this movement tends to upgrade status as "semi-professionals."

j. The standard American work week of 5 days and 40 hours is under pressure toward reduction. Some economists predict eventual acceptance of a 3-day work week, permitting 2 work forces in each organization in order to keep high-capital equipment in full operation. Meanwhile, increasing flexibility is being incorporated into the work force, permitting variable forms of part-time work and variable lengths and combinations of work spans--hours, days, weeks.

k. Automation is producing mixed effects on the American work force. The social and political impacts are not yet well understood. Automation clearly eliminates many jobs; simultaneously, it produces demands for new jobs. Whether these two effects balance out in maintaining maximum employment is not clear. Moreover, the new jobs created by automation tend to be jobs requiring skills different (or more complex) than those it displaces. Automation appears to increase the ratio of required supervision and maintenance. Computers have already automated many jobs in the IQ levels up to 100, and may proceed to jobs at the IQ level of 100 and up.

4. Organizations. Organizational dynamics provide a specific context of particular relevance to formal grade structure:

a. There do not exist smooth linear or pyramidal models applicable to the configuration of organizations of different size,

or of different size stages of the same organization (Baker and Davis). The classic pyramidal model is eroding (Berkley). No human institution can drastically change its size without changing its shape or configuration (Galileo).

b. Despite occasionally expressed reservations about correlation between college education and institutional leadership, 65% of all American college graduates occupy "professional" positions, and 85% are included in the "professional and managerial" category.

c. The channels of interaction between any organization and its social environment are proliferating and widening. Powerful dynamics in the general society will inevitably influence internal features of organizations, such as status structures and procedures.

d. All organized social groups are stratified, and will continue to preserve differentials in some structure of status, authority, and rewards commensurate with requirements, responsibilities, and skills.

e. Amidst dynamic, rapid change, organizational emphasis is shifting from stability to innovation ("No established institution in our society now perceives itself as adequate to the challenges that face it."--Donald A. Schon).

f. As specialization proliferates, professionals are increasing their membership in all organizations, with ambivalent effects. On the one hand, their services in complex functions are indispensable. On the other hand, professionals are more independent, tending to direct greater loyalty to their profession than to their work organization, and refusing to yield career authority to the organization. Tension between generalists and specialists will be endemic in organizations. One effect on structure is that, since professionals tend to receive salaries comparable to those of managers, the hierarchical salary structure is tending to flatten, especially in government (while in industry, some very high executives may still receive 50-60 times their secretary's salary, a government executive's salary will not exceed 5-6 times his secretary's salary).

g. Rigidity in hierarchical structure is giving way to flexibility, and authority is coming to rest more on expertise than on hierarchical position. The Great Man, or charismatic leader, syndrome is declining, diffusing power and generating requirement for more people for consensual decisionmaking.

h. Bureaucratization is increasing steadily in all major sectors of public and private life, on both sides of the Iron Curtain (Brady, Bennis, et al), requiring more persons in bureaucracies.

i. Organizations will have to downgrade administrative convenience and upgrade emphasis on the interests of their members, and reflect them in status and pay structure.

Factors Which Appear to Have An Ambivalent Relationship to Military Grade Creep.

While the foregoing factors appear to generate or intensify grade creep, it would not be appropriate to give the impression of asserting that all political, economic, social, and organizational

dynamics occurring in America clearly influence status in an escalatory decision. A number of factors appear ambiguous in their potential effects--possibly partially escalatory, possibly the reverse in part.

For example, when Professor Moore reports that our society is subject to a definite long-term trend toward upgrading in all occupations, it is clear that the military, as one institution within the context of American society, is subject to the upgrading occupational pressures impinging on all organizations. Similarly, when the lowest-grade military salary is quadrupled within nine years, and when advancing technology decreases the number of positions in the lowest grade of organizations, it is clear that grade creep will inevitably occur in the military establishment, whatever other internal considerations also exert pressures on grade structures.

A few of the listed indicators appear to point in the other direction. For example, compression in managerial salaries would appear to argue that while salaries in the lower managerial levels may rise, salaries in the upper managerial levels may remain static or decline. Automation may sharply curtail the number of middle managers required in the future, possibly lowering the average salary among all managers.

A number of indicators listed are ambivalent. The one just cited above, for example (curtailment in the number of needed middle managers), might well result in raising the pay and status of the lesser number of middle managers who remain. In fact, a large area of the future course of many trends is uncertain, and the effects of the trends unpredictable, such as the following:

1. The American Work Ethic appears to be losing some of its force. Many workers feel not only less commitment to work organizations, but also experience alienation from their own jobs and from work in general.
2. More than 1 in 4 in the labor force now work for a non-profit organization, increasing the influence on the whole economy of economic decisions (such as pay structures) in the non-profit sector.
3. The American economy is the first in the world in which the agricultural and production sectors are exceeded by the service sector, and in which white-collar workers outnumber blue-collar workers.
4. The proportion of national income derived from wages has increased steadily for 50 years (reaching 70% in 1963).
5. It appears likely that computers will substantially reduce the need for the 5 million persons now classified as middle managers.
6. Among values suffering apparent decline, especially among youth, are patriotism, general morality, and success (Yankelovich, et al).

The Destination of Trends.

In trying to discern the future, we may assume that we are attempting to discern trends in the future--an impossible task. What we are really trying to do is discern the future destinations (or, at least, interim milestones) of current trends. A very few

can be projected farther than others, but whether such trends can ever be projected ahead very far with even moderate confidence is doubtful. For one thing, the intensity of any trend, or cluster of interrelated trends, is highly uneven; the net effect of any cluster of trends, for example, may be positive in the short term, negative in the mid term, and positive again in the long term. Possibly no trend in human affairs progresses either upward, level, or downward in an unbroken linear fashion, even a trend which, subject to vagaries, appears to progress in a single direction over a very long period of time (such as, for example, the centuries-long decline of the concept of the divine right of kings, and the rise of the concept that political legitimacy resides in the entire citizenry of any polity).

How far ahead will current trends extend in the same direction as is occurring now--specifically, for example, how much longer will the average grade in the military establishment continue to creep upward? How far will the effects of escalation extend? No one can say. While grade creep appears likely to continue, one relevant prediction appears sound; it will not continue indefinitely. How far escalation of the average grade will have been carried, and how long the trend will have continued upward, by the time it is halted, it is impossible to predict.

It may profit us more if we try to discern milestones, or tentative plateau destinations, as resultants, or net effects, of broadly aggregated trends relative to status escalation and grade creep. With such an intention, we may profitably identify two conflicting fundamental trends in American society (and, at least, all other advanced societies), involving political, economic, cultural, social, work-force, and organizational dynamics, each with profoundly different implications for status and reward structures in major social institutions. The two trends are egalitarianism and meritocratic emphasis; if either is carried out to become the explicitly dominant system in American society, the nature of the society and its internal structures would be radically different, one from the other. The course of grade creep would be different, and possibly radically different, in each instance.

It may be useful for the purposes of this paper to suggest a succinct model of each extreme plateau-society; intermediate variations can then perhaps be more readily envisioned and implications conjectured about. It is emphasized that there is considerable evidence among the multiplicity of current trends to support the thesis that we are on a road leading toward a meritocratic society, and also plenty of evidence that we are trending toward an egalitarian society.

The Meritocratic Trend.

Trends can be discerned toward greater roles for government; greater proportion of government members at all levels in the entire work force; potential scarcity in energy and other critical resources; increased requirements for centralized planning and the accumulation

of relevant data; necessity for increased social control over an increasingly diversified society; demands for increased number and proportion of executives, managers, and leaders; the projected critical shortage of managerial talent; increased dimensions of available knowledge and of knowledge required for key positions, eventually becoming more esoteric and capable of being dealt with by fewer and fewer persons of high brainpower; escalating technological and interdisciplinary complexity, demanding higher levels of brainpower, up to levels of scarce availability in any society; continued ambivalence in relating high intellectual capacity to competence in handling human affairs; the possiblity of genetic and behavioral manipulation; increasing influence of knowledge institutions and data centers; the effect of automation in eliminating lower-qualification jobs; the related but imbalancing effect of automation in generating higher qualification jobs for operation, supervision, and maintenance; the declining proportion of the entire population participating in the income-earning labor force; declining commitment to the Work Ethic and projected decline in average working span; increase in hedonism; increase in the power of the media to manipulate attitudes; and others.

The net effect of such trends, and a number of others, might conceivably be to force society into structures with higher and higher requirements for fewer and fewer incumbents in higher levels of hierarchy, with wide differentials between the status and rewards provided for such incumbents, while limited work-participation and limited status and rewards are allocated to the mass of the population. Although such a society could still be jealous of the civil rights of all citizens, this "vision" suggests a modernized, even futuristic, version of Plato's Republic.

The Egalitarian Trend.

Trends can also be discerned toward the decline of the Great Man syndrome (the ascription of almost superhuman qualities to selected individuals); the decline of the authoritarian style of leadership and the emergence of the contract theory and pluralistic styles of leadership; escalating levels of median educational attainment among the entire population; the concurrent rise in consequential political participation in larger proportions of the population; the diffusion of power down from political and economic elites; proliferating population and increasing urbanization, combining to intensify the crowding of living conditions and the escalation of conforming, cooperative social values; increasing pressures toward legal and social equality, and more equitable distribution of wealth; erosion of authority and hierarchy; adversary orientation toward exercise of power by large social organizations; flattening of executive salary structures, and increase in starting salaries and the minimum wage; insistence on elimination of unemployment, through utilization of marginal and substandard workers; and others.

The net effect of such trends might conceivably be to force society into flatter structures with fewer and fewer distinguishing layers, with fewer and smaller differentials of status and rewards

among incumbents of all levels and occupations, and with dominant emphasis on the social values of cooperation and actualization of the full capabilities of every individual in the society. In its own way, such a "vision," however attractive it may appear on humanitarian grounds, may be as unrealistically utopian as the other extreme.

Both trends are supported by contributory current trends; but who can say which one will approach closer to future reality? What tremendous forces would have to impact on American society in shaping an atmosphere of opinion which would accept either alternative as reasonable, and not regard them as far-fetched--as we regard either one, today? We cannot know, and we have great difficulty even in guessing. So that we cannot forecast how far grade creep, as one indicator, will go, or how long it will last. We can feel confidence only in analyzing the short-term implications of grade creep as it is occurring, and as it appears woven into the tapestry of past and present social interaction.

Conclusion.

It remains to make one final distinction. We have cited a number of factors which, on balance, appear to testify to the ongoing momentum of grade creep, of status escalation within organizational grade structures. But to some degree, grade creep might be regarded as an amorphous movement pervading whole organizations, discerned most clearly in average status. We may profitably consider more pointedly another manifestation of grade creep: relative expansion in higher levels of grade structure--highlighted by an initial subsidiary question in this paper: are there proportionately too many generals, admirals, and colonels in the military establishment?

Relevant to this question, a number of indicators have been cited which are demonstrative of trends emphasizing escalation not only of whole structures, but especially of upper echelons. Other analysts may address the specific question of whether escalation in the upper echelons of the military is excessive, inadequate, or about right. The only aspect addressed here is whether or not a general trend is in motion that tends to swell the relative dimensions of upper echelons in organizations.

On that point, we have cited rising levels of education; escalating knowledge and technology to be coped with; tenacity of stratification in social structures; expansion in the roles of the administrative state, bureaucracy, and government at all levels, including non-routine functions requiring non-routine competence; rising requirements for employability; decline of authoritarian styles of leadership and rise in cooperative, participative, consensual styles of leadership (requiring more extensive coordination in decision-making and, probably, increase in the number of persons at directive levels); escalating requirements for leaders and managers of increasingly complex affairs; projected shortages of managerial talent; the effects of automation, including greater allocation of manpower to technology, maintenance, and supervision; increasing proliferation of specialization throughout organizational structures, eroding the utility of many generalists but heightening the requirements for effective generalists;

rapid expansion in the work-force sector comprising managers, scientists, and professionals; decline in the proportion of low-level positions and increase in the proportion of high-level positions across a wide spectrum of organizations; and other indications of disproportionate growth in higher echelons.

It will not do to say that there is nothing deterministic about the political, economic, social, and technological forces fueling the trends described in this paper. Insofar as these forces affect grade structures in modern organizations, including the military, many of them, in varying degrees, are highly deterministic, limiting the response flexibility available to the affected organization. As noted in the beginning, the Armed Services are among the organizations employing imagination, experience, and skill in addressing the dynamic complexities of grade escalation; but no organization is autonomous in these contexts. Some of the challenges to equitable distribution are within the purview of resolution by organizations; some are partially amenable; but some broad changes in progress are not amenable at all, and brook little or no compromise.

Thus, we have presented a number of indicators of grade creep, approached from several perspectives. From these data, we may conclude that, while we have not advanced any hypothesis nor have we "proved" any, enough evidence has been presented to warrant tentative argument that grade creep is by no means a phenomenon peculiar to the military establishment.

As for the desirability or undesirability of grade creep, one who withholds judgment as we have tried to do in this study, may find apropos the following lines from Stephen Vincent Benet's John Brown's Body:

> If you at last must have a word to say,
> Say neither, in their way,
> "It is a deadly magic and accursed,"
> Nor, "It is blest," but only, "It is here."

BIBLIOGRAPHY
(A: Books; B: Periodicals: C: Government Documents)

A: BOOKS

1. Armbruster, Frank E. The Forgotten Americans. New Rochelle, NY: Arlington House, 1972.

2. Argyris, Chris. Personality and Organization: The Conflict Between System and the Individual. New York: Harper, 1957.

3. The Army Almanac. Harrisburg, Pa: The Stackpole Press, 1959.

4. Baier, Kurt, and Rescher, Nicolas, eds. Values and the Future: The Impact of Technological Change on American Values. New York: The Free Press, 1968.

5. Bailey, Stephen K. Congress in the Seventies. New York: St. Martin's Press, 1970.

6. Barber, Benjamin R. Superman and Common Man: Freedom, Anarchy and the Revolution. Harmondsworth, United Kingdom: Penguin Books, Ltd., 1972.

7. Beckwith, Burnham Putnam. The Next 500 Years: Scientific Predictions of Major Social Trends. New York: Exposition Press, 1967.

8. Beebe, Gilbert W.; DeBakey, Michael E. Battle Casualties: Incidence, Mortality, and Logistic Considerations. Springfield, Illinois: Charles A. Thomas, Publisher, 1952.

9. Bell, Daniel, and Kristol, Irving, eds. Capitalism Today. New York: New American Library (Mentor), 1970, 1971.

10. Bendix, Reinhard. Work and Authority in Industry. New York: John Wiley & Sons, Inc., 1956.

11. _____, and Lipset, Seymour Martin, eds. Class, Status, and Power: Social Stratification in Comparative Perspective. New York: Free Press of Glencoe, 1966.

12. Bennis, Warren. Changing Organizations. New York: McGraw-Hill Book Company, 1966.

13. _____. The Leaning Ivory Tower. San Francisco: Jossey-Bass, 1973.

14. Berkley, George. The Administrative Revolution. Englewood Cliffs, NJ: Prentice-Hall, Inc. (SPECTRUM), 1971.

15. Best, Fred. The Future of Work. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1973.

16. Blau, Peter, and Duncan, Otis Dudley. The American Occupational Structure. New York: John Wiley & Sons, 1967.

17. Boulding, Kenneth E. The Meaning of the 20th Century: The Great Transition. New York: Harper & Row, Publishers, 1964.

18. Bowen, Howard R., and Mangrum, Garth L. Automation and Economic Progress. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1967.

19. Brady, Robert A. Organization, Automation, and Society: The Scientific Revolution in Industry. Berkeley: University of California Press, 1961.

20. Brickman, William W., and Lehrer, Stanley. Automation, Education and Human Values. New York: School & Society Books, 1966.

21. Bryant, Clifton D. The Social Dimension of Work, Englewood Cliffs, NJ: Prentice-Hall, Inc., 1972.

22. Brzezinski, Zbigniew. Between Two Ages: America's Role in the Technetronic Era. New York: Viking Press, 1970.

23. Burns, Tom,and Stalker, G. The Management of Innovation. London: Tavistock, 1961.

24. Cleveland, Harlow. The Future Executive. New York: Harper & Row, Publishers, 1972.

25. Congress and the Nation: A Review of Government and Politics, Vol. II: 1965-1968. Washington: Congressional Quarterly Service, 1969.

26. Congressional Staff Directory, 1959. Washington: Congressional Staff Directory, Inc.

27. _____, 1960.

28. _____, 1970.

29. _____, 1971.

30. _____, 1973.

31. Cyert, Richard M. and March, James. A Behavioral Theory of the Firm. Englewood Cliffs, NJ: Prentice-Hall, Inc. 1963.

32. Demczynski, S. Automation and the Future of Man. London: George Allen & Unwin Ltd., 1964.

33. DeSpelder, Bruce Irwin, Ratios of Staff to Line Personnel: A Study of Small and Medium-Size Manufacturers of Metallic Automotive Parts, Reserach Memo. No. 6, Bureau of Business Research. Columbus: Ohio State University, 1962.

34. Donham, Philip, and Fahey, Robert J. Congress Needs Help. New York: Random House, 1966.

35. Downs, Anthony. Inside Bureacracy. Boston: Little, Brown and Company, 1967.

36. Economic Survey of Europe in 1965. New York: United Nations, 1965.

37. Education for a Nation. Washington: Congressional Quarterly, Inc. 1972.

38. Encyclopedic Dictionary of Business Finance. Editorial Staff. Englewood Cliffs, NJ: Prentice Hall, May 1960.

39. Fenno, Richard F., Jr. Congressmen in Committees. Boston: Little, Brown and Company, 1973.

40. Fourastie', Jean. The Causes of Wealth. Glencoe, Ill.: The Free Press, 1960.

41. Froman, Lewis A., Jr. The Congressional Process: Strategies, Rules, and Procedures. Boston: Little, Brown and Company, 1967.

42. Gardner, John. Excellence: Can we be Equal and Excellent, Too? New York: Harper, 1961.

43. Gartner, Alan, et al, eds. The New Assault on Equality: IQ and Social Stratification. New York: Harper & Row, Publishers (Perennial Library), 1974.

44. Ginzberg, Eli. What Makes An Executive. New York: Columbia University Press, 1968.

45. _____. Manpower Agenda for America. New York: McGraw-Hill Book Company, 1968.

46. Goffman, Erving. Asylums. Garden City, NY: Anchor Books, 1961.

47. Golding, Patrick. Multipurpose Man: A New Work Style for the Modern Age. New York: Taplinger, 1974.

48. Goodling, Judson. The Job Revolution. New York: Walker and Company, 1973.

49. Goodwin, Leonard. Do the Poor Want to Work? A Social-Psychological Study of Work Orientations. Washington: The Brookings Institution, 1972.

50. Hahn, Walter, A., and Gordon, Kenneth F. Assessing the Future and Policy Planning. New York: Gordon and Breach, Science Publishers, 1973.

51. Hemphill, John K. Dimensions of Executive Positions: A Study of the Basic Characteristics of the Positions of Ninety-Three Business Executives. Research Monograph No. 98. Bureau of Business Research. Columbus: Ohio State University, 1960.

52. Herzberg, Frederick; Mausner, Bernard; Snyderman, Barbara Bloch. The Motivation to Work. New York: John Wiley & Sons, Inc. 1959.

53. Hiestand, David. Changing Careers After 35. New York: Columbia University Press, 1973.

54. Hinrichs, John R. The Motivations Crisis: Winding Down and Turning Off. New York: American Management Association, 1973.

55. Horney, Karen. The Neurotic Personality of Our Time. New York: W.W. Norton & Co., Inc. 1945.

56. The Image of the Future, by the editors of News Front. New York: YEAR Incorporated, 1968.

57. Jacobs, T. O. Leadership and Exchange in Formal Organizations. Washington: Human Resources Research Organization, 1970.

58. Joffe, A. J.; Froomkin, Joseph. Technology and Jobs: Automation in Perspective. New York: Frederick A. Praeger, Publishers, 1968.

59. Janowitz, Morris. The Professional Soldier. Glencoe, Ill.: Free Press, 1960.

60. _____, ed. The New Military: Changing Patterns of Organization. New York: Russell Sage Foundation, 1964.

61. Jenkins, David. Job Power: Blue and White Collar Democracy. New York: Doubleday & Company, Inc. 1973.

62. Johnson, Harry M. Sociology: A Systematic Introduction. New York: Harcourt, Brace & World, 1960.

63. Jungk, Robert, and Galtung, Johan, eds. Mankind 2000. London: Allen and Unwin, Ltd., 1969.

64. Kahl, Joseph A. The American Class Structure. New York: Holt, Rinehart and Winston, 1959.

65. Kahn, E. J., Jr. The American People: The Findings of the 1970 Census New York: Weybright and Talley, 1973, 1974.

66. Kahn, Herman, and Weiner, Anthony J. The Year 2000. New York: Macmillan, 1967.

67. Kammerer, Gladys M. The Staffing of Committees of Congress. Lexington, Ky.: University of Kentucky, Bureau of Government Research, 1949.

68. _____. Congressional Committee Staffing Since 1946. Lexington, Ky.: University of Kentucky, Bureau of Government Research, 1951.

69. Katz, Daniel, and Kahn, Robert. The Social Psychology of Organizations. New York: John Wiley & Sons, Inc., 1966.

70. Kaufmann, Carl B. Man Incorporate: The Individual and His Work in an Organized Society. Garden City, NY: Doubleday & Company, Inc., 1967.

71. Kluckhohn, Florence, and Strodtbeck, Fred L. Variation in Value-Orientations. Evanston, Ill.: Row, Peterson, 1961.

72. Kofmehl, Kenneth. Professional Staffs of Congress. West Lafayette, Ind.: Purdue University Press, 1962.

73. Kreps, Juanita M. Automation and Employment. New York: Holt, Rinehart and Winston, Inc., 1964.

74. Lane, Robert. Political Life. New York: Free Press (Macmillan), 1959.

75. Lassey, William R., ed. Leadership and Social Change. Iowa City: University Associates, 1971.

76. Lebergott, Stanley. Manpower in Economic Growth: The American Record Since 1800. New York: McGraw-Hill Book Company, 1964.

77. Levy, Marion J., Jr. The Structure of Society. Princeton: Princeton University Press, 1952.

78. _____. Modernization: Latecomers and Survivors. New York: Basic Books, 1972.

79. Lewin, Kurt. Resolving Social Conflicts. New York: Harper, 1948.

80. Likert, Rensis. The Human Organization. New York: McGraw-Hill Book Company, 1967.

81. Lipset, Seymour Martin, and Bendix, Reinhard. Social Mobility in Industrial Society. Berkeley: University of California Press, 1959.

82. Lipstreu, Otis, and Reed, Kenneth A. Transition to Automation: A Study of People, Production and Change. No. 1, "Series in Business," University of Colorado Studies. Boulder: University of Colorado Press, 1964.

83. Lynn, Kenneth S., ed. The Professions in America. Boston: Houghton-Mifflin Company, 1963, 1965.

84. MacBride, Robert. The Automated State: Computer Systems as a New Force in Society. New York: Chilton Book Company, 1967.

85. Mace, Myles L. The Growth and Development of Executives. Cambridge: Harvard Graduate School of Business Administration, 1950.

86. MacGregor, Douglas. The Human Side of Enterprise. New York: McGraw-Hill Book Company, 1960.

87. Machlup, Fritz. The Production and Distribution of Knowledge in the United States. Princeton: Princeton University Press, 1962.

88. Madden, Carl H. Clash of Culture: Management in An Age of Changing Values. Washington: National Planning Association, 1972.

89. Mangrum, Garth L., ed. The Manpower Revolution: Its Policy Consequences. Garden City, NY: Doubleday and Company, Inc. 1965.

90. Mannheim, Karl. Man in Society in An Age of Reconstruction: Studies in Modern Social Structure. London: Kegan Paul, 1940.

91. March, James, and Simon, Herbert. Organizations. New York: John Wiley & Sons, 1958.

92. Mayo, Elton. The Human Problems of An Industrial Civilization. New York: The Viking Press, 1933, 1960.

93. McBride, Robert. The Automated State: Computer Systems as a New Force in Society. Philadelphia: Chilton Book Company, 1967.

94. McHale, John. World Facts and Trends. 2d ed. New York: Collier Books, 1972.

95. Meadows, Donella H.; Meadows Dennis L.; Randers, Gorgen; and Behrens, William S., III. The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind. New York: Universe Books, 1972.

96. Merton, Robert K. Social Policy and Social Structure. Glencoe, Ill., The Free Press, 1957.

97. Michael, Donald. The Next Generation: The Prospects Ahead for the Youth of Today and Tomorrow. New York: Vintage Books, 1963, 1965.

98. _____. The Future Society. Chicago: Aldine, 1970.

99. Milner, Murray, Jr. The Illusion of Equality: The Effect of Education on Opportunity, Inequality and Social Conflict. San Francisco: Jossey-Bass, Inc., 1972.

100. Moore, Wilbert E. Order and Change; Essays in Comperative Sociology. New York: John Wiley & Sons, Inc., 1967.

101. _____. Industrial Relations and the Social Order. (revised ed.). New York: The Macmillan Company, 1951.

102. Morphet, Edgar L., and Ryan, Charles O., eds. Prospective Changes in Society by 1980. Vol. I of Designing Education for the Future. New York: Citation Press, 1967.

103. Parkin, Frank. Class Inequality and Political Order. Frogmore, St. Albans, UK: Paladin, 1972.

104. Parsons, Talcott. The Social System. New York: The Free Press of Glencoe, 1951.

105. Perrow, Charles. Organizational Analysis: A Sociological View. London: Tavistock, 1970.

106. _____. Complex Organizations: A Critical Essay. Glenview, Ill.: Scott, Foresman & Co., 1972.

107. Platt, John R. The Excitement of Science. Boston: Houghton Mifflin Company, 1962.

108. Poor, Riva, ed. 4 Days 40 Hours and Other Forms of the Rearranged Work Week. New York: New American Library (Mentor), 1973.

109. Potential Impacts of Cultural Change on the Navy in the 1970's. 7 vols. Center for Advanced Studies and Analyses, Westinghouse Electric Corporation, Falls Church, VA. August 1972 (AD 749 913).

110. Price, Derek. Science Since Babylon. New Haven: Yale University Press, 1961.

111. Pugh, D. S., Hickson, D. J , and Hinnings, C. R., eds. Writers on Organization. Harmondsworth, UK: Penguin, 1971.

112. Raudsepp, Eugene. Managing Creative Scientists and Engineers. New York: The Macmillan Company, 1963.

113. Register of Graduates and Former Cadets, United States Military Academy, 1802-1949. New York: West Point Alumni Foundation, 1949.

114. Register of Graduates and Former Cadets, United States Military Academy, 1802-1955. New York: West Point Alumni Foundation, 1955.

115. Report of the World Social Situation. New York: United Nations, 1965, 1967, 1970.

116. Riegel, K. F., ed. Intelligence: Alternative Views of a Paradigm. New York and Basel, Switzerland: S. Karger, 1974.

117. Riesman, David; Glazer, Nathan; Denney, Reuel. The Lonely Crowd. New Haven: Yale University Press, 1950.

118. _____. Individualism Reconsidered. Garden City, NY: Doubleday & Company, Inc., 1954.

119. _____. Abundance For What? Garden City, NY: Doubleday & Company, Inc.,1964.

120. Rogoff, Natalie. Recent Trends in Occupational Mobility. New York: The Free Press of Glencoe, 1953.

121. Rousek, Joseph, ed. Contemporary Sociology. New York: Philosophical Library, 1958.

122. Ryder, Fremont. The Scholar and the Future of the Research Library. New York: Hadham Press, 1944.

123. Schon, Donald. Beyond the Stable State: Public and Private Learning in a Changing Society. Harmondsworth, UK: Penguin Books, Ltd., 1973.

124. Seligman, Ben B. Most Notorious Victory: Man in An Age of Automation. New York: The Free Press, 1966.

125. Selznick, Philip. Leadership in Administration. Evanston, Ill.: Row, Peterson, 1957.

126. Sharp, Evelyn. The IQ Cult. New York: Coward, McCann, & Geoghan, 1972.

127. Sheldon, Eleanor Bernert, and Moore, Wilbert E. Indicators of Social Change: Concepts and Measurements. New York: Russell Sage Foundation, 1968.

128. Siegel, Irving H., ed. Manpower Tomorrow: Prospects and Priorities. New York: Augustus M. Kelley, Publishers, 1967.

129. Silberman, Charles E. The Myths of Automation. New York: Harper & Row, Publishers, 1966.

130. Simon, Herbert. Administrative Behavior. New York: The Macmillan Company, 1948.

131. Smith, Adam. An Inquiry Into the Nature and Causes of the Wealth of Nations. New York: Modern Library, 1937.

132. Smelser, Neil J., and Lipset, Seymour Martin. Social Structure and Mobility in Economic Development. Chicago: Aldine Publishing Company, 1966.

133. Snyder, Carl Dean. White Collar Workers and the UAW. Urbana, Ill.: University of Illinois Press, 1973.

134. Sorel, Georges. The Illusions of Progress. Berkeley: University of California Press, 1972 (orig. publ. 1908).

135. Sorokin, Pitirim. Social and Cultural Mobility. New York: Free Press, 1959 (orig. publ. 1927).

136. Splaver, Sarah. The Paraprofessions: Careers of the Future and the Present. New York: Julian Messner, 1972.

137. Tacheron, Donald G., and Udall, Morris K. The Job of the Congressman: An Introduction to Service in the US House of Representatives, 2d ed. Indianapolis: The Bobbs-Merrill Company, Inc., 1970.

138. Tannenbaum, Robert; Wechsler, Irving; Massarik, Fred. Leadership and Organization: A Behavioral Science Approach. New York: McGraw-Hill Book Co., 1961.

139. Taylor, C. L. and Hudson, M. C. , eds. World Handbook of Political and Social Indicators. 2d ed. New Haven: Yale University Press, 1972.

140. Taylor, Frederick W. The Principles of Scientific Management. New York: Harper and Brothers, 1947.

141. Thompson, D'Arcy. On Growth and Form. Cambridge University Press, 1963.

142. Toffler, Alvin. Future Shock. New York: Random House, 1970.

143. Uris, Auren. The Executive Job Market: An Action Guide for Executive Job Seekers and Employees. New York: Arco Publishing Company, Inc., 1965, 1968.

144. Wallace, Samuel E., ed. Total Institutions. New Brunswick, NJ: Transaction Books (distributed by E. P. Dutton & Co., Inc.), 1971.

145. Wallia, C. S. Toward Century 21. New York: Basic Books, Inc. 1971.

146. Warner, W. Lloyd; Meeker, Marchia; Eells, Kenneth. Social Class in America. A Manual for the Measurement of Social Status. New York: Harper & Row, Publishers, 1949.

147. Abegglen, James C. Occupational Mobility in American Business and Industry (Minneapolis: University of Minnesota Press, 1955).

148. _____; Van Riper, Paul P.; Martin, Norman H.; Collins, Orvis F. The American Federal Executive: A Study of the Social and Personal Characteristics of the Civilian and Military Leaders of the United States Federal Government. New Haven: Yale University Press, 1963.

149. Wattenberg, Ben J. and Scammon, Richard M. This USA: An Unexpected Family Portrait of 194, 067, 296 Americans Drawn From the Census. Garden City, NY: Doubleday & Company, Inc., 1965.

150. Wilkie, H. Frederick. A Rebel Yells. New York: D. Van Nostrand Company, Inc., 1946.

151. Wilensky, Harold L. "Life Cycle, Work Situation, and Participation in Formal Associations," in R. W. Kleemeir, ed. Aging and Leisure. New York: Oxford University Press, 1961.

152. Williams, Robin M., Jr. "Changing Value Orientations and Beliefs on the American Scene." In Illinois in Transition. Report of the State of Society Conference for Church Leaders, Dec. 7-9, 1965. Monticello, Ill.: University of Illinois, 1965.

153. Wool, Harold. The Military Specialist: Skilled Manpower for the Armed Forces. Baltimore: The Johns Hopkins Press, 1968.

154. Wolfbein, Seymour. Work in American Society. Glenview, Ill.: Scott, Foresman and Company, 1971.

155. The World Almanac and Book of Facts. New York: Doubleday and Company, Inc.,1966.

156. The World Almanac and Book of Facts. New York: Doubleday and Company, Inc.,1974.

157. Young, Michael. The Rise of the Meritocracy, 1870-2033. Baltimore: Penguin Books, Inc., 1961.

B. PERIODICALS

1. Aberle, D. F., et al. "The Functional Prerequisites of a Society." Ethics, 1950, pp. 110-111.

2. "American Life Styles of the 1980's." Report by the Management Research Center of the University of Rochester, for the Lincoln First Bank of Rochester, New York.

3. "America's Next Thirty Years--Business and the Future." Council on Trends and Prospective Economic Analysis and Study Group. Washington: Chamber of Commerce of the United States, n.d.

4. "An Ode to a 'Union' Army." Army Times, January 2, 1974, p. 20.

5. "Army to Reduce Washington Staff 15% by June." Army Times, December 5, 1973, p. 4.

6. "Automation: Life with a Little Black Box." Kaiser Aluminum News Special, No. 4, 1966.

7. "Automation and the Middle Manager: What Has Happened and What the Future Holds." New York: American Foundation on Automation and Unemployment, Inc., 1966.

8. "Automation and Unemployment." Washington: Chamber of Commerce of the United States, November 1968.

9. "Average Active Duty Pay." Army Times, February 20, 1974, p.4.

10. Baker, Alton W. and Davis, Ralph C. "Ratios of Staff to Line Employees and Differentiation of Staff Functions." New York: Bureau of Business Research, 1954.

11. Baltzell, E. Digby. Review. American Journal of Sociology, Vol. 79: No. 5 (March 1974), p. 1350.

12. Baran, Paul. "On the Impact of the New Communications Media Upon Social Values." Paper for Symposium on Communications. Law and Contemporary Problems, Part I. Durham, N.C.: Duke University School of Law, Duke University Press, 1969.

13. Behavioral Science Newsletter for Research Planning, Vol. II: No.9 (17 May 1974). Bethesda, Md.: American Institutes for Research, pp. 4-5.

14. Bell, Daniel. "Quo Warranto?" The Public Interest, Spring, 1970.

15. Bellman, Richard. "On the Explosion of Automation." Report p-2865. Santa Monica, Calif.: RAND Corporation, February 1964.

16. _____. "Science, Technology, and the Automation Explosion." Report P-2908. Santa Monica, Calif.: RAND Corporation, May 1964.

17. Bennis, Warren G. "Leadership Theory and Administrative Behavior: The Problem of Authority." Administrative Science Quarterly, Vol. IV: No. 3 (December 1959).

18. Boyer, Ernest L. "Higher Education for All, through Old Age." New York Times, April 8, 1974, p. 35.

19. Brzezinski, Zbigniew. "America and Europe." Foreign Affairs, October 1970.

20. Butler, Warren H. "The Role of the Staff." Public Administration Review, March 1966, pp.3-13.

21. Callender, Bruce. " 'Grade Creep' Solution a Long-range One." Air Force Times, November 22, 1971.

22. Childers, Jerry, Maj. "Grade Structure Can Be Made Appealing." Army Magazine, November 1971.

23. "Civilian Grade Creep May Slow." Army Times, November 7, 1973, p. 2.

24. "Civilian Job Conversions Lag." Army Times, November 21, 1973, p. 2.

25. "Collapse of Leadership." Editorial. New York Times, May 11, 1974.

26. "Congress Scans Indian-Chief Ratio." Air Force Times, April 12, 1972.

27. "Conversation: An Interview with Rensis Likert." Organizational Dynamics, Summer 1973.

28. "Conversation: An Interview with Warren Bennis." Organizational Dynamics, Winter 1974.

29. "Conversation: An Interview with Peter Drucker." Organizational Dynamics, Spring 1974.

30. Daniels, Norman. "The Smart White Man's Burden." Harper's Magazine, October 1973.

31. Davidson, F. "The Case for Institutional Assessment." Technology Review, December 1971.

32. Davis, Kingsley and Moore, Wilbert E. "Some Principles of Stratification." American Sociological Review, Vol. 10 (April 1956).

33. DeMott, Benjamin. "Beyond the SAT's: A Whole-Person Catalog That Works?" Saturday Review/World, May 4, 1974.

34. Drucker, Peter. "The Surprising Seventies." Harper's Magazine, July 1971.

35. Duncan, Otis Dudley and Hodge, Robert W. "Education and Occupational Mobility: A Regression Analysis." American Journal of Sociology, Vol. 68 (1963), pp. 629-644.

36. "The Dynamics of Change." Kaiser Aluminum News Special, No. 1, 1966.

37. "Education Funds Up $56 Billion in Decade, US Agency Reports." New York Times, May 17, 1974, p. 29.

38. England, George W. "Organizational Goals and Expected Behavior of American Managers." Academy of Management Journal. Vol. X: No. 2. (June 1967).

39. "Ethics as a Factor in Scientific Gains Urged by Scholars." New York Times, October 23, 1971.

40. "Ethics Debate is Set Off by Gains in the Life Sciences." New York Times. March 28, 1971, p. 1.

41. Etzioni, Amitai. "On Beating Universities Into Spearpoints." Psychology Today, July 1970.

42. Ewing, Lee. "Senator Wants to Aid Low Graders." Army Times, October 17, 1973, p. 13.

43. "The Executive as Social Activist." Time, July 20, 1970.

44. 'Faculty Load Policies and Practices in Public Junior and Community Colleges." Research Division, Memo HE-5. Washington: National Education Association, March 1972.

45. Farris, George F. "Congruency of Scientists' Motives with Their Organization's Provisions for Satisfying Them: Its Relationship to Motivation, Effective Job Experiences, Styles of Work, and Performance." Graduate Paper, Department of Psychology, University of Michigan, October 1969.

46. "Federal Pay Has Doubled in 10 Years." Washington Post, February 25, 1974, p. 2.

47. "The Five-Day Week in Manufacturing Industries." New York: National Industrial Conference Board, 1929.

48. Fowler, Elizabeth M. "Personal Finance: Pension Study Finds Many Companies Providing Plans for Early Retirement." New York Times, December 20, 1971.

49. Friedlander, Frank, Case Western Reserve University. "Technology, Youth, and Organizational Structures: Some Changing Patterns Relevant to the Military." Paper for USMA Leadership Seminar, West Point, N.Y., 1969.

50. "Genius Is No Longer Such a Great Trait." New York Times, April 25, 1974, p. 4.

51. Gerber, William. "Changing Corporate World." Editorial Research Reports. Vol. I: No. 5 (February 3, 1971).

52. Gettler, Michael. "GI Earnings Rated Above Civilian Pay." Washington Post, September 16, 1973, p. 1.

53. _____. "The Pentagon Bureaucracy." Washington Post, August 27, 1973, pp. 1, 16.

54. "Grade Creep--Is It as Bad as Some Say? Air Force Magazine, July 1973.

55. "Grade Proliferation Hit by Appropriations Unit." Air Force Times, September 27, 1972.

56. "The Great Escape: More Affluent Adults Quit Corporate World to Lead Simpler Lives." Wall Street Journal, February 19, 1971, p. 1.

57. Hampton, Robert E. "The Changing Federal Service." Civil Service Journal, April-June 1964.

58. Haskings, Caryl. Presidential Report 1965-1966. Washington: Carnegie Institution, 1966.

59. Hastings Center Report No. 3. Hastings-on-Hudson, N.Y.: Institute of Society, Ethics, and Life Sciences, December 1971.

60. Hatt, Paul K. "Occupation and Social Stratification." American Journal of Sociology, Vol. 55 (May 1950).

61. "Health Care Crisis." The Retired Officer, July 1974.

62. Hechinger, Fred M., Jr. "Youth's New Values." New York Times, May 28, 1974, p. 37.

63. Hoefling, John A., BG, USA. "Leadership in the Modern Volunteer Army." Army, August 1971.

64. Horowitz, Bob. "'Top-Heavy' Services Hit--Rank Examined." Air Force Times, October 27, 1971.

65. _____. "Hill Asks Review of Senior Rank--Too Many Eagles, Stars?" Air Force Times, November 24, 1971.

66. _____. "Rank Overhaul Urged--House Report Critical of 'Too Many Chiefs' Trend." Air Force Times, August 2, 1972.

67. Humphrey, Derek. "Workers to Inspect the Books." London Times, July 14, 1974, p. 2.

68. Impact of Future Technology on Navy Business Management. Vol. 1. Report for Department of the Navy. Palo Alto, Calif.: Management and Economic Research, Inc., January 1968 (AD 824692).

69. Inkeles, Alex and Rossi, Peter H. "National Comparisons of Occupational Prestige." American Journal of Sociology. Vol. LXI (January 1956).

70. Jennings, Eugene. "Mobicentric Man." Psychology Today. July 1970.

71. "The Job Blahs: Who Wants to Work?" Newsweek, March 26, 1972.

72. Karsh, Bernard. "The Meaning of Work in an Age of Automation." Current Economic Comment (Reprinted by Institute of Labor and Industrial Relations, University of Minnesota), August 1957.

73. Kaufmann, Walter. Behavior Today, February 7, 1972.

74. Kirk, Dudley. Review. American Journal of Sociology. Vol. 79: No. 5 (March 1974), p. 1358.

75. Kroeger Louis J.; Ennis, Elwood; Williams, Elmer V.; Martin, Hal E. "Pricing Jobs Unique to Government." Personnel Report, No. 643. Chicago: Public Personnel Association, n.d.

76. "Laird Justified Grade Creep." Air Force Times. Jan. 31, 1973.

77. Levinson, D. J. "Authoritarian Personality and Foreign Policy." Journal of Conflict Resolution. March 1957.

78. Lipset, Seymour Martin, and Ladd, Everett Caroll, Jr. "College Generations from the 1930's to the 1960's" The Public Interest. Fall 1971.

79. Little, Dennis L., and Gordon, Theodore J. "Some Trends Likely to Affect American Society in the Next Several Decades." Working Paper WP-16. Middletown, Conn: Institute for the Future, April 1971.

80. Maeroff, Gene I. "Students Scores Again Show Drop." New York Times. Dec. 16, 1973, p. 1.

81. Marsh, Robert M. "Values, Demand, and Social Mobility." American Sociological Review. Vol. 28 (Aug. 1963).

82. Mead, Shepherd. "How to Survive the Generation Gap." Signature. May 1970.

83. "Mean of Selected Characteristics for Sample of Faculty Members with Full-Time Teaching Assignments at Junior Colleges." National Research Bulletin. Washington: National Education Association, March 1973.

84. Miller, S. M. "Comparative Social Mobility: A Trend Report." Current Sociology. Vol. 9: No. 1 (1960).

85. Mills, Ted. "The Thirteenth Dilemma." Atlanta Economic Review. May-June 1974.

86. "The Moment of Truth on Automation Is Coming." Newsletter, Washington: Research Institute of America, Dec. 27, 1963.

87. Morgenthaler, Eric "Hanging On: Most People Eligible for Early Retirement Prefer to Stay on Job." Wall Street Journal. July 17, 1970.

88. "Officer Ratios High, DOD Tells Services." Army Times. Oct. 10, 1973, p. 23.

89. "Opinion: The Truth About Social Security." AARP (American Association of Retired Persons) Bulletin. July-August, 1974.

90. Perrow, Charles. "The Short and Glorious History of Organizational Theory." Organizational Dynamics. Summer 1973, pp.2-15.

91. Peterson, Iver. "Flunking Is Harder as College Grades Rise Rapidly." New York Times. March 19, 1972.

92. Phillips, Larry. "Services May Cut 64 Star Slots by Fiscal '76." Army Times. Oct. 24, 1973, p. 55.

93. Platt, John R. "Hierarchical Restructuring." Bulletin of Atomic Scientists. Nov. 1970.

94. Pohl, Frederick. "The Midas Plague." The Case Against Tomorrow. New York: Ballantine, 1957.

95. Reiss, Albert J., Jr. "Occupation Mobility of Professional Workers." American Sociological Review, Vol. 20 (Dec. 1955).

96. "Rep. Aspin Criticized." Army Times. Oct. 10, 1973, p. 45.

97. Revel, Jean-Francois. "Without Marx or Jesus: The New American Revolution Has Begun." Saturday Review. July 24, 1971.

98. Roby, Pamela. Review American Journal of Sociology. Vol. 79: No. 5 (Mar. 1974) p. 1346.

99. Semoff, David. "No Life Untouched." Saturday Review. July 23, 1966.

100. Sastrow, Robert. "Satellites May Make Earth the Smallest of Worlds." New York Times. June 9, 1974, p. E6.

101. "Security Clearance." Army Times. Jan. 16, 1974, p. 33.

102. Severo, Richard. "Survey Finds Young U.S. Workers Increasingly Dissatisfied and Frustrated." New York Times, May 22, 1974, pp. 37, 70.

103. Shaffer, Helen B. "Four-Day Week." Editorial Research Reports. II: 6 (Aug. 11, 1971).

104. Shoemaker, Randall. "Advisers Urge Smaller Raises." Army Times. Sep. 19, 1973, pp. 1, 20.

105. _____. "Top-Dollar Job Holders Dwindle: Retirees in Defense Industry." Army Times. Jan. 16, 1974, p. 4.

106. "6100 Colonels Dropped Since 1969." Army Times. Feb. 27, 1974, p.2.

107. Slater, Philip. "Culture in Collision." Psychology Today. July 1970.

108. "Staffing Systems-Management and Professional Jobs." Report. New York: National Industrial Conference Board, 1972.

109. Strauss, Anselm L., and Martin, Norman H. "Patterns of Mobility Within Industrial Organizations." Journal of Business. Vol. 29 (April 1956).

110. "Systems Analysis and Social Change." Astronautics and Aeronautics. Dec. 1967.

111. "Teaching Is First as Career Choice." New York Times. Apr. 25, 1974.

112. "Toward the Year 2000: Work in Progress." Daedalus, Summer 1967.

113. Trend Report. No. 7. New York: Institute of Life Insurance, Sept. 1973.

114. U.S. News and World Report. Apr. 24, 1972.

115. Weidenbaum, Murray L. "Academics on Government Committees: Corrections." Change. Vol. 6: No. 5 (June 1974), p. 4.

116. Whitsell, David A. "Human Growth in the Formal Organization." Air University Review. May-June 1969.

117. "Wholesale Prices Soared in July An Adjusted 3.7%." Wall Street Journal. Aug. 9, 1974, p. 3.

118. Wilensky, Harold. "Work, Careers, and Social Integration." International Social Science Journal. Vol. 42 (Fall 1960).

119. _____, and Edwards, Hugh. "The Skidder: Ideological Adjustments of Downwardly Mobile Workers." American Sociological Review. Vol. 24 (Apr. 1955), pp. 215-231.

120. _____. "Mass Society and Mass Culture: Interdependence or Independence." American Sociological Review. Vol. 29 (Apr. 1964).

121. "Will the 5-day Week Become Universal? It Will Not!" Pocket Bulletin. New York: National Association of Manufacturers, 1926.

122. Wirtz, Willard. Address. Ann Arbor, Mich: University of Michigan, 1964.

C: GOVERNMENT DOCUMENTS
Miscellaneous

1. "Financial Trends in Education." Report, US Office of Education. Washington: Dept. of Health, Education, and Welfare. 1974.

2. Goldich, Robert L. "Defense Manpower Costs." Washington: Congressional Research Service. May 31. 1974.

3. _____. "Military Pay and Allowances, 1949-1973: A Selective and Annotated Bibliography." Washington: Congressional Research Service, June 4, 1974.

4. Handbook of Labor Statistics. Department of Labor. Washington: USGPO, April 1974.

5. Historical Statistics of the United States: Colonial Times to 1957. Bureau of the Census. US Department of Commerce. Washington: USGPO, 1961.

6. _____. Continuation to 1962 and Revisions. Bureau of the Census. US Department of Commerce. Washington: USGPO, 1965.

7. Howe, Harold, II. "The People Who Serve Education." Dept. of Health, Education, and Welfare. (US Commissioner of Education) Washington: USGPO, 1969.

8. Manpower Report of the President. Including Reports by the US Department of Labor and the US Department of Health, Education, and Welfare. Washington: USGPO, April 1974.

9. Occupation Outlook Handbook, 1974-1975. Bureau of Labor Statistics. Washington: Department of Labor, 1974.

10. "Personnel Impact of Automation." Washington: US Civil Service Commission, December 1957.

11. Projection of Educational Statistics to 1982-1983. National Center for Educational Statistics, Office of Education Washington: Department of Health, Education, and Welfare, 1973.

12. Projection of Educational Statistics to 1979-1980. National Center for Educational Statistics, Office of Education. Washington: Department of Health, Education, and Welfare, 1974.

13. Report of the National Commission on Technology, Automation, and Economic Progress. Report to the President and Members of Congress. Washington: USGPO, 1965.

14. Science Indicators 1972. National Science Board, National Science Foundation. Washington: USGPO, 1973.

15. Social Indicators 1973. US Department of Commerce. Washington: USGPO, 1973.

16. Summers, Wallen M., LTC, USA. "Combat Casualties and Mission Accomplishment." Student Paper. Fort Leavenworth, Kansas: US Army Command and General Staff College, March 1970.

17. Work in America. US Department of Health, Education, and Welfare. Washington: USGPO, December 1972.

CONGRESS

18. United States. Congress. New Views on Automation. Papers Submitted to the Subcommittee on Automation and Energy Resources, Joint Economic Committee. Washington: USGPO, 1960.

19. United States. Congress. Senate. Document No. 93-58. Report of the Secretary of the Senate from July 1, 1973 to December 31, 1973. Washington: USGPO, 1973.

20. United States. Congress. House. Washington: USGPO. "Utilization of Military Manpower." Hearings Before the Special Subcommittee on Utilization of Military Manpower. Committee on Armed Forces. 86th Congress, 2d Session. May 1959- February 1960.

21. United States. Congress. House. Washington: USGPO. Hearings Before the Special Subcommittee on Utilization of Military Manpower. Committee on Armed Forces. 92d Congress, 1 st and 2d Sessions. October 13, 1971-March 6, 1972.

22. United States Congress. House. Washington: USGPO. Report by the Special Subcommittee on the Utilization of Manpower in the Military. Committee on Armed Services. 92d Congress, 2d Session. 1972.

23. United States. Congress. House. Washington: USGPO. "The Federal Executive Service." Hearings Before the Subcommittee on Manpower and Civil Service of the Committee on Post Office and Civil Service. 92 Congress, 2d Session. April 1972.

DEPARTMENT OF DEFENSE and MILITARY DEPARTMENTS

24. Department of Army. Army Battle Casualties and Nonbattle Deaths in World War II, 9 December 1941-31 December 1946. Final Report. Washington: Office of the Adjutant General.

25. Department of Army. "Criticism of the Current Military Pay System." Office, Chief of Finance. December 1952 (Revised March 1953).

26. Department of Army. US Army War College. Leadership for the 70's. Carlisle Barracks, Pa. October 1971.

27. Department of Air Force. "Is There Grade Inflation?" Supplement to Air Force Policy Letter for Commanders. October 1973, pp. 23-30.

28. Department of Defense. "A Concept for Officer Personnel of the Armed Services." Report to the DOD ad hoc Committee to Study and Revise the Officer Personnel Act of 1947. December 1960.

29. Department of Defense. "Comparison of Compensation for the Uniformed Services and Civilian Employees (Federal and Private Industry)." Office, Assistant Secretary of Defense (M&RA). September 14, 1962.

30. Department of Defense. "Study of Military Compensation." Office of Assistant Secretary of Defense/Inter-Service Study Group. October 1964.

31. Department of Defense. "Study of Military Compensation: A Summarization." Office of Assistant Secretary of Defense/ Inter-Service Study Group. October 1964.

32. Department of Defense. "Report on Officer Grade Limitations." May 1973.

33. Department of Defense. Manpower Requirements Report, FY 1975. Washington, 1974.

DISTRIBUTION

Comdt, National War College	1
National War College, Strategic Research Group	1
National War College, Director of Instruction	1
Pres, Naval War College	1
Naval War College, Dir of Acad Affairs	1
Comdt, Air War College	1
Air War College, Dir of Curriculum Planning	1
Comdt, Industrial College of Armed Forces	1
Industrial College of Armed Forces, Dir of Academic Plan and Research	1
Comdt, Command and General Staff College	1
Comdt, Concepts Analysis Agency	1
432d Military Intelligence Detachment	1
434th Military Intelligence Detachment	1
467th Military Intelligence Detachment	1
USMA, Office, Dean of Academic Board	1
ODCSOPS, DA	12
Defense Documentation Center	12
Army Library	1
USAWC Library	2
AWCI	5
AWCA	1
AWCAA	1
AWCAB	1
AWCAC	1
AWCAE	1

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: ACN 74019

2. GOVT ACCESSION NO.:

3. RECIPIENT'S CATALOG NUMBER:

4. TITLE (and Subtitle): PYRAMIDS, BALLOONS, AND SQUISHY SPHERES: THE DYNAMIC CONTEXT OF MILITARY GRADE CREEP, VOL II

5. TYPE OF REPORT & PERIOD COVERED: Military Issues Research Memorandum (Final)

6. PERFORMING ORG. REPORT NUMBER:

7. AUTHOR(s): Dr. Anthony L. Wermuth

8. CONTRACT OR GRANT NUMBER(s):

9. PERFORMING ORGANIZATION NAME AND ADDRESS: Strategic Studies Institute, US Army War College, Carlisle Barracks, PA 17013

10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS:

11. CONTROLLING OFFICE NAME AND ADDRESS:

12. REPORT DATE: 20 November 1974

13. NUMBER OF PAGES: 208

14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office):

15. SECURITY CLASS. (of this report):

15a. DECLASSIFICATION/DOWNGRADING SCHEDULE:

16. DISTRIBUTION STATEMENT (of this Report)

Distribution limited to US Gov't Agencies only: Proprietary info, 20 Nov 74. Other requests for this document must be referred to Strategic Studies Institute, US Army War College, Carlisle Barracks, PA

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Grade creep; military grade structures; stratification; grade escalation; status escalation; grade and status inflation; military stratification; military structural dynamics; military hierarchies; military division of labor; military compensation; social forces and grade escalation; combat to support ratios.

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

One relentless focus of questioning of the military establishment has concerned grade creep, that is, steady escalation of the average grade within the armed forces, which is in turn related to questions concerning the ratio of combat to support among US forces, and the proportion of general/flag officers to overall military strength. This study eschews polemics or advocacy, or judgment as to whether the trend is good or bad. This paper accepts the premise that the trend is occurring. It adduces data indicating that the same trend

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

20. (CONTINUED)

is occurring in the Executive Department, the Congress, and the Civil Service, and explores broader developments in stratification theory, social values, the American work force, and organizational dynamics, indicating that status escalation is a widespread secular trend in technological societies, one that apparently has an extended course to run in the future, with significant implications.